City of Palo Alto (ID # 5780)

City Council Staff Report

Report Type: Action Items **Meeting Date: 12/14/2015**

Summary Title: Highway101 Bike Bridge Next Steps

Title: Next Steps for the Highway 101 Pedestrian/Bicycle Overpass Project: Direct Staff to Cease Negotiations with Moffat & Nichol, Issue a New RFP, and Seek Additional Funding

From: City Manager

Lead Department: Public Works

Recommendation

Staff recommends that Council direct staff to:

1) Cease negotiations with Moffat and Nichol for a contract for design of the Moffatt and Nichol low-profile suspension bridge, Submission C, from the Adobe Creek Pedestrian & Cyclist Bridge 2014 Design Competition; and
2) Proceed with a Request for Proposal for design services to develop a new bridge concept for the Highway 101 Pedestrian/Bicycle Overpass Capital Improvement Program (CIP) project PE-11011 that meets the current CIP budget of $10.1 million (not including staff costs), with a budget addition of $0.35 million in Regional Improvement Program construction funds and a potential budget contribution of $1.0 million from Google, for a total anticipated budget of $11.4 million; and
3) Partner with Google to secure a $1.0 million contribution from the company to supplement the project budget for the Highway 101 Pedestrian/Bicycle Overpass; and
4) Pursue additional public and private funding to support inclusion of enhancements to standard bridge design and construction cost increases, for a potential upper project budget of $13 to $17 million.

Executive Summary

This report reviews staff's efforts following the bridge design competition and Council's direction in March 2015 to confirm the constructability and costs of the Moffatt and Nichol (M&N) low-profile suspension bridge and negotiate a contract with M&N for design of the bridge. A review of the M&N design performed by Caltrans confirmed the constructability of the design. However, M&N provided staff with higher construction costs once contract discussions began. These higher costs would result in a project budget of over $17 million and staff is concerned based on discussions with other bridge designers and contractors that the ultimate costs could be significantly higher than $17 million. The current CIP budget, excluding staff costs, is $10.1 million and the VTA has allocated an additional $0.35 million in Regional Improvement Program (RIP) construction funding that has not yet been appropriated into the project. Since the last review of the project by Council, staff has met with Google representatives, who have committed to a contribution of $1.0 million toward the project, pending City review and acceptance, resulting in a new potential project budget of $11.4 million. Staff is recommending that the negotiations with M&N be ended, and that a new Request for Proposal (RFP) process be used to select a design team for the bridge. The design team selected through the RFP process would focus on a more standard design in an effort to conform to the anticipated project budget of $11.4 million, but would also evaluate the inclusion of design element enhancements that were preferred during the design competition process. Additionally, staff recommends continuing to seek additional funding for the project that could allow incorporation of such design elements and/or cover further cost increases that are likely to result from the current cost escalation and bidding environment.

Background

Feasibility Study and Preliminary Design Work

The Highway 101 Pedestrian/Bicycle Crossing Feasibility Study identified the need for an overcrossing at Adobe Creek and was unanimously accepted by Council in November 2011. Currently, the Lefkowitz tunnel/Adobe Creek underpass is only accessible during fair weather conditions. The underpass is a multi-use pathway 8 feet wide with 7.5 feet of vertical clearance and limited lighting. This study supports the necessity for a year-round pedestrian and bicycle overcrossing. The proposed bridge spans Highway 101 at Adobe Creek in south Palo Alto and is a key component of the City's Bicycle & Pedestrian Transportation Plan. Council authorized work to begin on a preliminary design and an environmental

assessment of the Adobe Creek overcrossing by awarding a contract to Alta Planning + Design (Alta) in Spring 2012 (Staff Report ID #2771). The scope of work included development of bridge alternatives and an environmental assessment in accordance with California Environmental Quality Act (CEQA) and the National Environment Protection Act (NEPA). Bridge alignments were focused on connections with the San Francisco Bay Trail and a closed section of the Adobe Creek Reach trail (West Bayshore to West Meadow Roads), based on public feedback at the September 2012 public scoping meeting.

The project has been awarded grants totaling $8.35 million to be used for construction: $4 million in State Transportation Improvement Program (STIP) funds through One Bay Area Grant, $4 million in Santa Clara County recreation funds through the County/Stanford University Trails Agreement and $350,000 in additional STIP funds added by Santa Clara Valley Transportation Authority (VTA) in 2014.

Design Competition Process and Result

The design competition, managed by the American Institute of Architects California Council (AIA CC) in partnership with the City and Santa Clara County AIA chapter, concluded in December 2014. Following the competition process, additional public input was gathered and Council directed staff to negotiate a design contract with the Moffat and Nichol design team (M&N), using the team's low profile bridge design (Staff Report ID #5523). The competition process included:

- Input from the community, Architectural Review Board, Park and Recreation Commission and Council to develop design principles and finalize design guidelines (Summer 2014)
- Review of 20 team qualifications
- Three teams submitting their best designs
- Jury selection of "The Confluence" design, Submission A (December 2014)
- Competition results/design review meetings with Public Art Commission, Architectural Review Board, Palo Alto Bicycle Advisory Committee, Parks and Recreation Commission and Planning and Transportation Commission (December 2014- February 2015)
- Extensive public input on design submissions (March 2015)

- Council's selection of M&N design team and direction to work with staff in developing a scope of services for the low-profile suspension bridge design, Submission C (March 2015)

In addition to directing staff to negotiate with M&N, Council directed staff to independently verify the cost and constructability of the low-profile suspension bridge with the assumption of staying within the realm of the $10 million planning-level estimate developed in 2012.

Constructability and Cost Review of M&N Design

Following Council's March 2015 direction, staff contacted Caltrans, whose structural unit agreed to review M&N's design. In May 2015, Caltrans reviewed computer modeling and a supplemental M&N structural design memo indicating the design to be constructible.

As part of its design competition submittal, M&N provided an estimate of $9.0 to $9.5 million for construction of the bridge, with a proposed design fee of 20% of the construction cost, or approximately $1.9 million (M&N Memo dated December 8, 2014, Attachment A). Upon initiation of contract negotiations following Council's March 2015 direction, M&N provided an updated planning level construction cost estimate of $12.2 million, with an updated proposed design fee of $2.4 million. Following numerous discussions with the M&N team about likely costs, the planning level construction cost was refined to a figure of $12.8 million including contingencies, which would result in an expected total project budget of $17 million. In addition to the $12.8 million construction figure, the total project budget of $17 million includes $2.6 million in M&N design costs; $1 million in construction management and administration costs; and $0.6 million in design, environmental assessment and competition costs incurred to date. The $17 million figure does not include staff salaries or construction cost escalation to 2018.

M&N's low-profile suspension bridge design is complex and unique. Staff believes unknown costs are likely to further increase the $17 million planning level project cost estimate. Some of these factors may include delays in design approvals with unexpected soil conditions, constrained site complexities resulting in utility relocations, frontage road realignments and associated right-of-way impacts, larger pylons, additional columns, increased depth of the bridge deck, and

additional Caltrans and agency requirements imposed on the project during environmental, right-of-way and design phases. While some of these factors are also applicable to a more standard bridge design, the probability of unforeseen issues adding time and cost to the project is greater with a unique, one-of-a-kind design. Staff has also reviewed the design with bridge designers and contractors who have expressed their opinions that the final cost would be significantly higher than $17 million.

Discussion

Based on the revised cost of the M&N design and potential for costs to further increase, staff recommends ceasing negotiations with M&N on the low-profile suspension bridge. The features of the M&N design, compared to a standard bridge design, are briefly described below.

M&N Bridge Design Features

The low-profile suspension bridge concept includes the following components:

- Raised 5 foot sidewalk to separate slower pedestrian traffic from bicycle traffic
- Stairwell on the west side
- Plaza and landing transition on the east (Baylands) side
- Accessibility ramps at maximum 5 to 8 percent grade with 2 percent cross slope
- Aesthetically pleasing fencing and railings
- Benches, signage and amenities such as drinking water fountains
- Compliance with design guidelines developed for the design competition
- Aesthetically pleasing drainage system to retain storm water on-site
- Incorporation of art, utility conduits for future communication lines and other new infrastructure
- Aesthetic lighting on bridge structure, ramps and trail entrances
- Aesthetic modifications to existing bike lane and pedestrian networks along East and West Bayshore Roads to integrate new trail access points at the plazas and stairwell locations

Standard Bridge Design Features

The standard steel or concrete box girder bridge is similar to the M&N low-profile suspension bridge but differs in components such as:

- A larger, more visible bridge including a thicker, box-type deck structure and increased number of columns
- Higher bridge deck elevations and standard galvanized railings
- Additional concrete columns including one within the freeway and possibly larger column structures within the Baylands
- Elimination of the stairwell, raised sidewalk, enhanced lighting, railing, benches, large plaza areas and similar amenities

The project description common to both bridge options includes a 230-250 foot main span structure with an eighteen-foot wide pedestrian and bicycle overcrossing, although the standard bridge design may result in a width of less than eighteen feet to reduce costs. The interior cross section of the eighteen-foot design bridge is sixteen feet and includes a five-foot sidewalk and an eight-foot two-way bicycle path with two feet of lateral clearance on each side and a one foot wide striped buffer. The project also includes seating areas at both ends of the bridge and a multi-use pathway that will provide a safer, more direct and accessible path along the Adobe Reach Trail (assuming the proposed Class 1 Adobe Creek Reach Trail follows the same alignment as the Santa Clara Valley Water District (SCVWD) maintenance road).

<u>Possible Cost Reduction Strategies</u>
Strategies to reduce project costs through a new RFP include:

- Reduce the width of the bridge deck
- Reduce the amenities and enhanced features through use of standard railings, lighting systems
- Reduce the size of any plaza within the Baylands, and potentially lower the height of structures to provide additional features consistent with the protections of the federal Bird Migratory Treaty Act
- Provide for traditional construction methods
- Consider standard bridge option
- Consider prequalification of bidders and inclusion of bid add alternates.
- Consider a third-party peer review by bridge engineering design firm to assess the 15%, 35%, 65% and 100% design, design assumptions, constructability and construction estimates
- Consider issuing a Construction Manager/General Contractor (CM/GC) RFP to select a contractor to provide a similar third-party peer review by a

bridge contractor to assess/verify the constructability and the construction cost estimate against current market conditions

Bridge Design Options and Staff Recommendation to Proceed with RFP

Options to proceed with design of the Highway 101 Bicycle/Pedestrian Overcrossing include the following:

1. Proceed with M&N low-profile suspension bridge with a cost of $17 million or higher
2. Utilize an RFP process to refocus the project on a standard bridge with a lower cost, while including alternates to add design enhancements where feasible and affordable, and allow all interested design teams to submit proposals.

Staff does not recommend Option 1 due to the high cost and potential for significant cost increases and schedule delays. The competition process resulted in the M&N design concept, which is sensitive to the Baylands natural environment and supported by the community, but, as the design developed further, did not meet the project budget goals. Staff has not considered the option of entering into negotiations with the HNTB team for design of their "Confluence" arch design from the competition, due to community and Council concerns about the potential impacts on bird safety and the design's appropriateness for the Baylands area.

Staff believes that issuing a new RFP (Option 2) is the best course of action at this time. A new RFP would reset the process and place the emphasis on realigning costs with the project budget. The RFP would allow all design teams to submit proposals, refocused on an $11.4 million target budget and allow the City to separately evaluate including design element enhancements identified during the design competition.

Additionally, staff recommends continuing to seek additional funding for the project (as described below) that could allow incorporation of such design elements and/or cover further cost increases likely to result from cost escalation and the current bidding environment. Potential design enhancements include low maintenance stainless steel finishes for railings, larger plazas, more seating areas and design features to minimize bridge height. The need for additional

funding will be assessed upon completion of the 35% design phase should Council choose to proceed with a new RFP.

Google Contribution and Other Public and Private Funding Possibilities

Google is interested in the successful and timely completion of the Highway 101 Bicycle/Pedestrian Bridge and has been in contact with staff to track the progress of the project. Google has committed to contributing $1 million to the project, with some conditions. Staff recommends that Council direct staff to work with Google to secure this contribution, if possible. Google also conveyed its intent to provide the right-of-way needed at 3601 West Bayshore Road at no cost to the City.

At this time staff does not have an updated project cost estimate for a more standard bridge, but market trends suggest the current budget of $11.4 million (including $1 million from Google) may not be adequate for the project, either with the preferred eighteen foot bridge width or using a narrower design. Between 2011 and 2014, the Caltrans Bridge Cost Index increased 48 percent and construction costs on City projects have been generally higher. Staff recommends pursuing additional public and private funding to support an upper project budget target of $13 to $17 million allowing for the wider bridge width and incorporation of other desirable design features, as well as increases in construction costs likely to be realized in the 2018 market.

Stanford University and City of Palo Alto submitted a joint $8.5 million grant application in 2012 and Stanford was awarded $4.5 million from the Santa Clara County Recreation Fund established by the County/Stanford Trails Agreement. Stanford has relinquished $4.5 million and will build the Stanford perimeter trail with Stanford funds. This could be an opportunity to use the relinquished $4.5 million to fund the bridge's funding shortfall should the County Board of Supervisors agree to reallocate funds.

Additionally, staff may be able to pursue cycle 3 grant funding through the 2016 Regional Active Transportation Program (ATP), other grants and/or public-private partnerships to fund the shortfall should County funds not be available.

Resource Impact

Funds for the Adobe Creek Reach Trail feasibility study of $40,000 were included in the Transportation and Parking Improvements CIP PL-12000. Funding used for the feasibility study, preliminary design, environmental assessment and the design competition of $673,000 was included in the Highway 101 Pedestrian/Bicycle Overpass Project CIP PE-11011, for a total cost to date of $713,800. Additionally, $890,000 in staff time has been used to date in managing the project and the design competition, for a total cost of approximately $1.6 million. Additional funding for a design services contract is available in PE-11011, Highway 101 Pedestrian/Bicycle Overpass Project.

With the forthcoming appropriation of the Regional Improvement Program (RIP) construction funding in the amount of $0.35 million and a potential contribution of $1.0 million from Google toward the project, staff anticipates a construction and design project budget of $11.4 million. This additional $1.35 million will be proposed in the FY 2017-2021 Capital Program.

As discussed with the Finance Committee at the November 17 meeting as part of the Fiscal Year 2015 Budget Closing CMR and presentation of the Fiscal Year 2015 Comprehensive Annual Financial Report, the Fiscal Year 2016 Budget Stabilization Reserve contains a set-aside of $6 million to fund costs related to Infrastructure Plan projects. The closing of the budget is scheduled for Council approval at a Council meeting during the latter part of January or early February.

Policy Implications

The project is consistent with the goals, policies and programs of the Comprehensive Plan.

Goal T-3 Facilities, services and programs that encourage and promote walking and bicycling

Goal T-14 Improve pedestrian and bicycle access to and between local destinations, including public facilities, schools, parks, open space, employment districts, shopping centers, and multi-model transit stations.

Timeline

The current schedule estimates completion of the bridge project in Fall 2019. Staff anticipates the preliminary design and environmental assessment to be completed in early 2017 assuming a mitigated negative declaration is prepared and depending on input from regulatory agencies, City Council, boards and commissions, and the community.

Assuming a mitigated negative declaration (MND) and environmental assessment (EA) for the project will be prepared in compliance with CEQA and NEPA dependent on the outcome of special environmental studies.

- Extend STIP funding deadline (E-76) to November 01, 2017
- Issue RFP to seek bridge designers (December 15, 2015)
- Begin Phase 1, design (April 2016)
- Complete 15% design (early Spring 2016)
- Site and design review, public circulation of draft Environmental Assessment and Planning and Transportation Commission review (Fall 2016)
- Circulation of Final MND/EA/complete public review (Fall 2016)
- Completion of Phase 1, 35% design, estimates and environmental assessment, Caltrans' environmental phase (Fall 2016)
- Staff to authorize Phase 2, design at risk to complete design and construction bid documents (Fall 2016)
- Completion of 100% design and construction bid documents, obtain E-76 (November 01, 2017)
- Amend consultant contract Phase 3, construction administration (early 2018)
- Obtain permits, begin construction (early 2018)
- Complete construction (2019)

Environmental Review

While the Highway 101 Pedestrian/Bicycle Overpass Project requires significant CEQA and NEPA assessment, no environmental review is required for the recommendations made in this report.

Attachments:

- Attachment A - Moffatt and Nichol Memo dated December 8, 2014 (PDF)

moffatt & nicho

STEVEN GROVER &ASSOCIATES ARCHITECTURE ENGINEERING

December 8, 2014

City of Palo Alto
Purchasing and Contract Administration
250 Hamilton
Palo Alto, CA 94301
Attn: John Montenero

Reference: Contract 2014-25, Adobe Creek Pedestrian & Cyclist Bridge Competition Phase 2

Dear Selection Committee,

We appreciate your invitation to submit deliverables for the Adobe Creek Pedestrian and Cyclist Bridge Design Competition. The project has engaged our creativity and we are excited to share our detailed vision for a Silicon Valley landmark.

This letter serves as our transmittal for the following deliverables:

1. DVD with video
2. Three 24x36 design boards delivered to Palo Alto City Hall, 250 Hamilton, 6th Floor, Attention Elizabeth Ames
3. List of team members (see attached)
4. Construction sequence diagram (see attached)
5. Plan, section, night elevation, and various renderings (see design boards)
6. Bridge alignment within Project Boundaries (see design boards)
7. Discussion of items listed in item 7 of Exhibit B of the competition agreement (refer to design boards and narration of video for all items except discussion of expected costs, which is attached)
8. Design boards and this letter submitted electronically to john.montenero@cityofpaloalto.org

Sincerely,

Gary Antonucci, P.E.

Steven Grover, Architect & P.E.

Construction Sequence

1. Establish temporary staging areas at 363 West Bayshore Road parking lot and at east touchdown plaza.

Supports and Side Spans Erection

2. Construct all foundations and supports outside of Caltrans right of way.
3. Bring in shop-fabricated sections by truck. Lift into place and field weld sections together.

Main Spans Erection

Bring in shop-fabricated sections by truck. Locate NB half of main span at east staging area, SB half at west staging area.

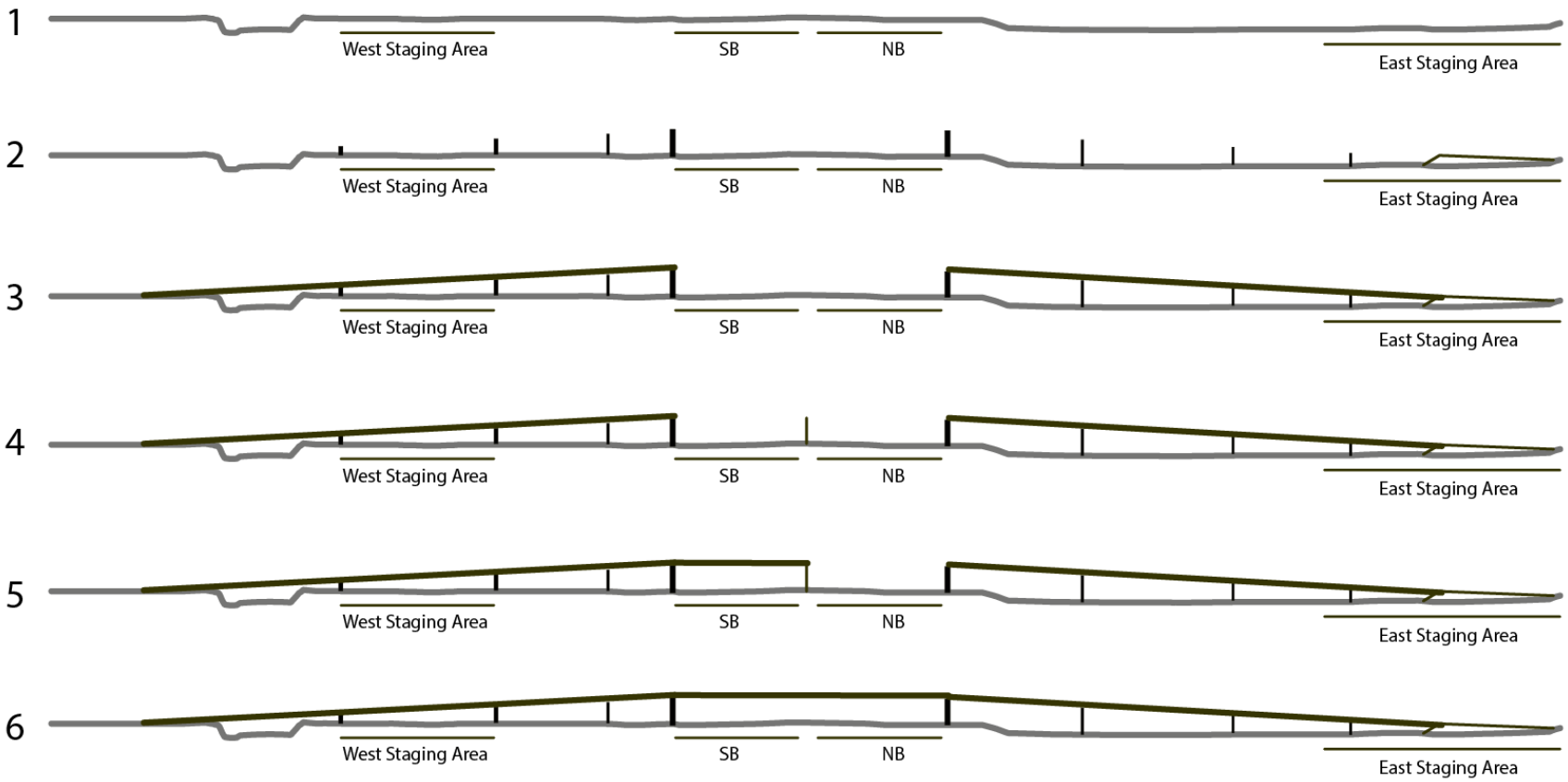
4. Construct temporary support at center median during nighttime closure of lanes next to median.
5. Lift SB half of main span into place during nighttime detour of SB traffic to NB side and field weld to west approach structure.
6. Lift NB half of main span into place during nighttime detour of NB traffic to SB side and field weld to east approach structure.

Field weld main span sections to each other and remove temporary support at center median during nighttime closure of lanes next to median.

Main Spans Alternate

Bring in shop-fabricated sections by truck and field weld into single section.

Lift entire main span structure into place during single 4hr nighttime closure of entire freeway.


1
West Staging Area
SB
NB
East Staging Area
2
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SB
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3
West Staging Area
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NB
East Staging Area
4
West Staging Area
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East Staging Area

Design and Construction Costs

The design vision we have created is extremely versatile; unlike many concepts this design can be refined in a number of ways to achieve the City's desired balance of tradeoffs without completely transforming its visual, spatial, and safety/comfort characteristics. For example, we can explore different span arrangements and alternate structural approaches to achieve similar architectural results. Based on the materials, landscape design, and structural approach described in our submittal, we believe that the construction cost for the bridge would be approximately $8 million (see below), and the civil, architectural, and landscape components would add $1 to $1.5 million to that. For a project of this size and scope, design costs would likely be on the order of 20% of construction cost.

ROM Estimate of Construction Costs

Segment	Description	Bridge Type	Length (ft)	Width (ft)	Deck Area (SF)	Est. Cost/SF	Est. Contr. Cost.
1	West approach	spine girder on single columns	230	18	4,140	$ 350	$ 1,449,000
2	West approach curve	Single steel edge beam, cantilever deck	136	20	2,720	$ 500	$ 1,360,000
3	Main Span over US101	Steel box edge girders each side, floor beams, top pipe section on one side to increase depth of beam.	204	20	4,080	$ 500	$ 2,040,000
4	East transition span	Transition between 3 and 4	100	18	1,800	$ 500	$ 900,000
5	East ramp	Single steel edge beam, cantilever deck	200	20	4,000	$ 500	$ 2,000,000
6	East ramp	On fill	100	18	1,800	$ 150	$ 270,000
			970		18,540	$ 433	$ 8,019,000