Appendix G
LAX SPECIFIC PLAN AMENDMENT STUDY REPORT

SPAS Concepts Preliminary Rough Order of Magnitude Cost Estimates

2011/2012

Prepared for:

Los Angeles World Airports
One World Way
Los Angeles, California 90045

Table AF-1
North Airfield Improvement Options - Summary ROM Cost Table (Excluding Lincoln Blvd)

Options	Demolish Existing RWY 6L-24R (8925'x150') and/or 2000' of existing east section of RWY 6R-24L	Demolish Existing RWY 6R-24L (10285'x150')	Demolish existing Exit TWYS and TXLS	Construct New RWY 6L-24R (9529' x 200')	Construct New RWY 6R-24L (11535' x 200')	Construct RWY 6R-24L Extension (1250' x 150' or 835'x150) and (2000' x150') of RWY 6R-24L	Construct new TXLS , TWYS & Service Road	Regrading of Pavement in the vicinity of TXL D, TWY E & Service Road	Drainage Improvement	Electrical & Navigation	Misc. Utilities	North Airfield Tunnel Removal Cost	Misc. Bldgs demolition and modification Cost	Argo Drainage Channel Modification Cost	Scoped Estimated Construction Cost	Contract Contingency @ 10% of Scoped Construction Cost	Soft Cost @ 27% of Scoped Construction Cost	Rounded Up Project Total Scoped Estimated ROM Cost
Alternative 1	$14,985,600	$0	$3,460,800	$79,844,800	$0	$14,761,600	$125,534,236	$8,433,600	$43,610,164	$38,324,083	$5,844,222	$21,873,600	$2,778,167	$116,562,044	$476,012,915	$47,601,292	$128,523,487	$652,100,000
Alternative 2	$2,004,800	$0	$1,802,509	$0	$0	$14,761,600	$73,363,819	$8,433,600	$19,036,963	$16,729,452	$5,844,222	$0	$2,778,167	$5,000,000	$149,755,131	$14,975,513	$40,433,885	$205,200,000
Alternative 3	$0	$14,963,200	$7,868,266	$0	$96,656,000	$0	$150,111,080	$8,433,600	$50,728,324	$44,579,436	$10,512,930	$0	$8,799,272	$5,000,000	$397,652,108	$39,765,211	$107,366,069	$544,800,000
Alternative 4	$2,004,800	$0	$0	$0	$0	$13,898,080	$2,457,838	$0	$0	$0	$0	$0	$0	$5,000,000	$23,360,718	$2,336,072	$6,307,394	$32,000,000
Alternative 5	$14,985,600	$0	$7,868,266	$79,844,800	$0	$14,761,600	$150,595,189	$8,433,600	$49,078,773	$43,129,831	$10,512,930	$21,873,600	$5,523,542	$116,562,044	$523,169,774	$52,316,977	$141,255,839	$716,700,000
Alternative 6	$14,985,600	$0	$3,460,800	$79,844,800	$0	$14,761,600	$118,942,697	$8,433,600	$42,171,808	$37,060,074	$5,844,222	$21,873,600	$2,778,167	$66,839,416	$416,996,385	$41,699,638	$112,589,024	$571,300,000
Alternative 7	$0	$14,963,200	$7,868,266	$0	$96,656,000	$0	$141,197,166	$8,433,600	$48,783,198	$42,870,083	$10,512,930	$0	$5,523,542	$5,000,000	$381,807,984	$38,180,798	$103,088,156	$523,100,000

Note: For comparison basis only.

Assumptions:

1) The enabling projects related to Taxilane D & E easterly extensions, which may include site clearing , roadway work and facility demolition and replacement are not included in the estimate.
2) There are impacts to the security fencing, guard post, etc. that are not included.
3) The estimate assumes that all Right of Ways and land acquisition is complete.
4) The estimate does not include the potential cost of Community Benefits Agreements or MMRP costs that may be triggered.
5) There is likely to be additional airfield phasing costs related to the Terminal 1 and Lincoln Blvd work, which are dependent upon design.
6) There may be tenant relocation costs, which are not priced in the estimate.
7) All costs are reflected in Dec-2010 dollars. Depending upon the schedule of work, there may be additional cost related to escalation and phasing.
8) The Argo Drainage Channel estimates (by others) are for solutions along the existing alignment.
9) The estimate does not include off-airport commercial property acquisition and relocation cost.
10) All North (except 350') and No Increase in Separation Options are based on ADG V - ADG V - Service Road Configuration. 350'N Option is based on ADG VI - ADG VI - SR and 100'S Option on ADG VI - ADG V SR
11) The estimate does not include potential mitigation of office building located at 8939 S. Sepulveda Blvd. or the Lincoln apartments.
12) General Contractor Overhead & Profit @ 12% is included in each individual cost item

Notes on Submitted Exhibits:

1) All North Options (except 350'), are assumed to have the same layout and configuration per 260'N Option (Exhibit 1, May 11, 2011).
2) 350'N Option is as per Exhibit 1, June3, 2011
3) 100'S, SPAS Alt-7 is per July 1, 2011 map, though as Taxiways are not shown on this map, it is assumed that Taxiways configuration and layouts are per 350'N Option.
4) No Increase in Separation Option is per January 5, 2011 map, though two segments on taxilane D, one segment on taxilane E and one Taxiway to Rwy 6L-24R are added.
5) Lincoln Blvd realignment, Terminals demolition & construction and Gates Replacement Costs are not included in this table.

Source: Los Angeles World Airports and AECOM, 2011.

Table AF-2
North Airfield Improvement Options-Detailed Assumptions

Description	Unit	Quantity	Unit Cost	Extended Cost	Round Up	Quantity	Reference		Comments
Demolish Runway 6L-24R-Existing 8925' x 150'									For Runway Assume 19" PCC over 12" Econocrete over 12"aggregate base course. For shoulder assume 4" AC over 12" aggregate base.
Concrete Saw Cut	LF	1800	19.6	$35,352					
Removal of Runway Concrete pavement 19" thick	SY	148750	$23.0	$3,421,250		$314,000	Cost Analysis		Existing Runway is 8925' x 150'
Removal of Shoulder Asphalt Pavement 4" thick	SY	79333	$6.0	$476,000		$374,000			Avg width of shoulder and erosion control is taken 40'
Removal of Econocrete 12" thick	SY	148750	$15.0	$2,231,250			Cost Analysis		
Removal of aggregate base course 12" thick	SY	228083	$5.0	$1,140,417			Cost Analysis		
Hauling of suitable material for backfill	LCY	280179	$7.6	$2,141,968			p1022, i1034		3 mile haul avg. For backfilling screened material recovered from excavation work for new Runway & Taxiway is assumed to be used
Backfill by suitable screened material	LCY	280179	$3.9	$1,100,262			p1018, i3320		
Compact backfilled material	ECY	215522	$0.6	$120,908			p1029, i5100		
Water for compaction	ECY	215522	$2.0	$427,208			p1030, i9040		
Remove Miscellaneous Items	LS	1	$500,000.0	$500,000					
Total				**$11,594,615**	**$11,590,000**	**$/SF=**	**$8.66**		Demolishing runway per SF of runway (150' wide)
Construct Runway 6L-24R-NEW 9529' x 200'									DWG No. 20030035, Sheet 317, Section 2A
unclassified excavation	BCY	566976	$15.0	$8,504,633		0.51			1.02 is for ramps
Hauling excavated material	LCY	737068	$7.6	$5,634,886	0.4	$3	p1022, i1016		Assume excavated material is hauled 3 mile (6 mile cycle) to a dumping area for screening.
Spreading dumped material	LCY	737068	$2.3	$1,006,983	401,361.6	$1	p1019, i0011		
Screen excavated material	LCY	737068	$5.4	$2,427,902	0.4	$331,522	p1070, i350		Assume 80% of excavated material is recycled, and 20% needs to be disposed.
Loading-Disposal of unsuitable excavated material	LCY	147414	$1.2	$176,896	1.2	$0.00			
Disposal of unsuitable excavated material-Hauling	LCY	147414	$21.4	$3,153,915					50 miles Cycle
Loading of suitable material for backfill	LCY	34761	$1.2	$41,713	1.2	$0.00			Ref to sht C317. Backfill sides of Runway
Lime treated subgrade 6"	SY	31763	$10.1	$320,810		$0			
Subgrade preparation	SY	328221	$3.0	$984,663					
Hauling of suitable material for backfill	LCY	34761	$7.6	$265,749			p1022, i1016		3 mile haul
Back fill by suitable screened material	LCY	34761	$3.9	$136,507		$132,710	p1018, i3320		Suitable material left over to be used for backfill of demolished runway= 555375 LCY out of this amount 280179 is used for backfill of demolished runway and
Compact backfilled material	ECY	26739	$0.6	$15,001		0.97	p1029, i5100		
Water for compaction	ECY	26739	$2.0	$53,003			p1030, i9040		
Plain pcc pavement (p-501), 19" thick	SY	211756	$105.0	$22,234,333			p280, i2210		HCC, margin is added for dowels and expansion joints.
Econocrete, 12" thick	SY	211756	$48.0	$10,164,267					
Processed material base (PMB)	CY	230578	$25.0	$5,764,457					
Prime coat	SY	116466	$5.2	$605,621					
Asphalt Concrete 4" thick	SY	116466	$28.0	$3,261,036	28.0				
Crushed aggregate base course, 8" thick	CY	18823	$55.0	$1,035,249	55.0				
Geogrid	SY	755967	$7.0	$5,291,771					
Runway Painting	SF	142935	$1.5	$214,403			38116		
Total				**$71,293,797**	**$71,290,000**	**$/SF=**	**$37.41**		Construction Cost 200' width

Table AF-2
North Airfield Improvement Options-Detailed Assumptions

Description	Unit	Quantity	Unit Cost	Extended Cost	Round Up	Quantity	Reference		Comments
Construct Runway 6R-24L Extension 1250' x 150'									Extension is assumed to have the same profile as new runway,
unclassified excavation	BCY	62569	$15.0	$938,542					Runway width 150' and shoulder & erosion 40'+15'
Hauling excavated material	LCY	81340	$7.6	$621,846		0.78	p1022, i1016		Assume excavated material is hauled 3 mile (6 mile cycle) to a dumping area for screening.
Spreading dumped material	LCY	81340	$2.3	$185,212		$280,734	p1019, i0011		1.02 is for ramps
Screen excavated material 7.1	LCY	81340	$5.4	$360,175	4.4	$360,178	p1070, i350		Assume 80% of excavated material is recycled, and 20% needs to be disposed.
Loading-Disposal of unsuitable excavated material	LCY	16268	$1.2	$19,522	1.2	$0			
Disposal of unsuitable excavated material-Hauling	LCY	16268	$21.4	$348,055					50 miles Cycle
Loading of suitable material for backfill	LCY	4441	$1.2	$5,329	1.2	$0			
Lime treated subgrade 6"	SY	4167	$10.1	$42,083		$0	$0		
Subgrade preparation	SY	36111	$3.0	$108,333					
Hauling of suitable material for backfill	LCY	4441	$7.6	$33,953			p1022, i1016		3 mile haul
Back fill by suitable screened material	LCY	4441	$3.9	$17,441			p1018, i3320		Suitable material left over to be used for backfill of
Compact backfilled material	ECY	3416	$0.6	$1,917			p1029, i5100		demolished runway= 555375 LCY out of this amount
Water for compaction	ECY	3416	$2.0	$6,772			p1030, i9040		280179 is used for backfill of demolished runway and
Plain pcc pavement (p-501), 19" thick	SY	20833	$105.0	$2,187,500			p280, i2210		HCC, margin is added for dowels and expansion joints.
Econocrete, 12" thick	SY	20833	$48.0	$1,000,000					
Processed material base (PMB)	CY	24846	$25.0	$621,142			24846		
Prime coat	SY	15278	$5.2	$79,444					
Asphalt Concrete 4" thick	SY	15278	$28.0	$427,778	$28	$0			
Crushed aggregate base course, 8" thick	CY	2469	$55.0	$135,802	$55	$0			
Geogrid	SY	77292	$7.0	$541,042		$0			
Runway Painting	SF	18750	$1.5	$28,125			$3,977		
							-$3		
Total				**$7,710,013**	**$7,710,000**	**$/SF=**	**$41.12**		Construction Cost 150' width
Construct Taxilanes & Taxiways, 1' x 100' (Avg=100')									Construction cost per LF is estimated. PCC 100' + shoulder 35'+erosion control 15'
unclassified excavation	BCY	20	$15.0	$298					
Hauling excavated material	LCY	26	$7.6	$198			p1022, i1016		3 mile haul avg.
Screen excavated material	LCY	26	$5.4	$77		$0	p1070, i350		
Loading Disposal of unsuitable excavated material	LCY	5	$1.2	$6		0.00			
Disposal of unsuitable excavated material-Hauling	LCY	5	$21.4	$111					50 miles Cycle
Loading of suitable material for backfill	LCY	1	$1.2	$1					
Hauling of suitable material for backfill	LCY	1	$7.6	$8		$699	p1022, i1016		3 mile haul avg.
Back fill by suitable screened material	LCY	1	$3.9	$4		$7	p1018, i3320		Taxilane D extension, necessitates two 170' x 70' x30' and
Compact backfilled material	ECY	1	$0.6	$0			p1029, i5100		one 120'x40'x30' bus gates plus other buildings as per
Water for compaction	ECY	1	$2.0	$2			p1030, i9040		option 100'S be demolished. The building demolition cost is
Plain pcc pavement (p-501), 19" thick	SY	11	$105.0	$1,167			p280, i2210		estimated in"Ter-1 & Gates" sht. Also no Taxiway or
Econocrete, 12" thick	SY	11	$48.0	$533					
Lime treated subgrade 18"	SY	19	$21.0	$397			p1031, i2200 to2260		

Table AF-2
North Airfield Improvement Options-Detailed Assumptions

Description	Unit	Quantity	Unit Cost	Extended Cost	Round Up	Quantity	Reference		Comments
Lime treated subgrade 6"	SY	3	$10.1	$34			p1031, i2200		
Prime coat	SY	11	$5.2	$57					
Asphalt Concrete 4" thick	SY	11	$28.0	$311					
Crushed aggregate base course, 8" thick	CY	1	$55.0	$41					
Asphalt chip seal, 1/4"	SY	23	$4.0	$93					
Taxiway & Taxilane Painting		15	$1.5	$23			2		
Total	**TLF**			**$3,361**		**$/SF=**	**$33.61**		Taxiway linear Feet=TLF
Demolish Taxiway 1' x 100'									
Removal of Runway Concrete pavement 19" thick	SY	11	$23.0	$256			Cost Analysis		100' taxiway plus 40' shoulder
Removal of Shoulder Asphalt Pavement 4" thick	SY	9	$6.0	$53					
Removal of Econocrete 12" thick	SY	11	$15.0	$167			Cost Analysis		
Removal of aggregate base course 12" thick	SY	20	$5.0	$100			Cost Analysis		
Hauling of suitable material for backfill	LCY	23	$7.6	$174			p1022, i1034		3 mile haul avg.
Backfill by suitable screened material	LCY	23	$3.9	$89			p1018, i3320		
Compact backfilled material	ECY	17	$0.6	$10			p1029, i5100		
Water for compaction	ECY	17	$2.0	$35			p1030, i9040		
Total	**TLF**			**$883**					Demolish taxiway cost per SF of taxiway and shoulder (100+2*40=180)
									Demolish taxiway cost per SF of taxiway and shoulder (100+2*40=180)
Total existing Taxiway to be demolished as per Arial figure 7	**SF**	630319	**$4.91**	**$3,092,061**	**$3,090,000**	**$/SF=**	**$4.91**		Only this item is based on total width of existing taxiways (180') because the existing taxiways area is by PDF mapping
Taxilane D relocation by changing pavement markings and paintings	SF	32250	6	$193,500					15 SF of marking & painting per TLF
Option-100' N									
Taxiways north of Centerfield Taxiway	TLF	2650							
Taxiways south of Centerfield Taxiway	TLF	3760							
Taxilanes	TLF	13609							
Total Taxiway & Taxilane to be constructed as per Arial figure 7	TLF	**20019**	**$3,361**	**$67,667,353**			$67,670,000		
							2458		
Storm Drain Modifications is estimated as per $66/SY of new Taxiways & Taxilanes &runways			$30,031,467	**$30,030,000**		SD	162250		
Electrical and navigation modification at & 58/SY			$26,391,289	**$26,390,000**		Elec	142583		
Other utility modifications (fire, fuel, water, sewer….) which are affected mainly by construction of Taxilane D is estimated to be around $ 50/SY of Taxilane construction		56044	$50	**$2,802,222**		Utility	122917		

Table AF-2
North Airfield Improvement Options-Detailed Assumptions

Description	Unit	Quantity	Unit Cost	Extended Cost	Round Up	Quantity	Reference		Comments
Demolish East Section of Runway 6R-24L-Existing 2000' x 150'									About 2000' of Runway 6R-24L is to be redone for slope adjustment
Concrete Saw Cut	LF	400	19.6	$7,856					
Removal of Runway Concrete pavement 19" thick	SY	33333	$23.0	$766,667					
Removal of Shoulder Asphalt Pavement 4" thick	SY	17778	$6.0	$106,667					
Removal of Econocrete 12" thick	SY	33333	$15.0	$500,000					
Removal of aggregate base course 12" thick	SY	51111	$5.0	$255,556		$2,004,800.00			
Remove Miscellaneous Items	LS	1	$150,000.0	$150,000					
Total				**$1,786,745**	**$1,790,000**	**$/SF=**	**$5.96**		
Construct East Section of Runway 6R-24L-Existing 2000' x 150'									About 2000' of Runway 6R-24L is to be redone for slope adjustment
Lime treated subgrade 6"	SY	6667	$10.1	$67,333					
Plain pcc pavement (p-501), 19" thick	SY	20833	$105.0	$2,187,500					
Econocrete, 12" thick	SY	20833	$48	$989,583		$20,842.1	20833		
Processed material base (PMB)	CY	39753	$25.0	$993,827					
Prime coat	SY	15278	$5.2	$79,444					
Asphalt Concrete 4" thick	SY	15278	$28.0	$427,778	28	$0			
Crushed aggregate base course, 8" thick	CY	3951	$55.0	$217,284	55	$0			
Geogrid	SY	65852	$7.0	$460,962		$0	-$3		
Runway Painting	SF	30000	$1.5	$45,000					
Total				**$5,468,712**	**$5,470,000**	**$/SF=**	**$18.23**		
Section of Taxilane D constructed by changing pavement markings and paintings	**SF**	32865	$6.0	**$197,190**					
Taxiways plus Taxilane Construction cost for different options (Arial Exhibit 1)									For Taxiways and taxilanes all demolition and construction cost for all areas the same detail is assumed.
Option - 260' N (500' to 24R & 460' to 24L)									Sevice road cost is also considered for north option
Taxiways north of Centerfield Taxiway	SF	592486							
Taxiways south of Centerfield Taxiway & North of 24L	SF	434142							
Taxiways south of 24L	SF	420132							
Taxilanes D, E & Centerfield	SF	1769619							
Total Taxiway & Taxilane to be constructed	SF	**3216379**	$33.61	$108,090,937					
Service Road Cost				$3,993,202					
Total Taxiway & Taxilane & service road Cost				**$112,084,139**					

Table AF-2
North Airfield Improvement Options-Detailed Assumptions

Description	Unit	Quantity	Unit Cost	Extended Cost	Round Up	Quantity	Reference		Comments
Option - 100' N (400' to 24R & 400' to 24L)									
Taxiways north of Centerfield Taxiway	SF	473989							
Taxiways south of Centerfield Taxiway & North of 24L	SF	377515							
Taxiways south of 24L	SF	420132							
Taxilanes D, E & Centerfield	SF	1769619				Taxiway Area previously			
Total Taxiway & Taxilane to be constructed.	**SF**	**3041255**	**$33.61**	**$102,205,635**		**$2,001,900**			
Service Road Cost				**$3,993,202**					
Total Taxiway & Taxilane & service road Cost				**$106,198,837**					
Total new Runways	**SY**	232589	**100N**	**200N**	**300N**	**400N**	**260N**		
Total new Taxiways & Taxilanes	**SY**		337917	351084	361570	373396	357,375		
Total new Runways, Taxiways & Taxilanes	**SY**		570506	583672	594159	605985	589,964		
Round Up	**SY**		571000	584000	594000	606000	590,000		
Ratio for estimating SD & Elec for options 200, 260, 300 & 400N				1.023	1.041	1.062	1.033		
Storm Drain Modifications is estimated as per $66/SY of new Taxiways & Taxilanes & Runways			**$37,653,400**	**$38,522,380**	**$39,214,490**	**$39,995,035**	**$38,937,646**		
Electrical and navigation modification at & 58/SY			**$33,089,352**	**$33,853,000**	**$34,461,219**	**$35,147,152**	**$34,217,931**		
Other utility modifications (fire, fuel, water, sewer….) which are affected mainly by construction of Taxilane D is estimated to be around $50/SY of Taxilane D construction per Exhibit 1	SY	104361	**$5,218,056**						
Pavement Removal Summary									
260' North		**SY**	**CY*1.20**	**CY - Round Up**					
19" PCC Pavement Removal		220992	139962	140000					
4" AC Pavement		128238	17098	17000					
No Separation									
19" PCC Pavement Removal		20251	12826	13000					
4" AC Pavement		16201	2160	2000					
100'S									
19" PCC Pavement Removal		298219	188872	189000					
4" AC Pavement		190464	25395	25000					
Option-350' N (550' to 24R & 500' to 24L)		For New north option layouts, the Twy & Tln south of Rwy 6R-24L and Centerfield Twy are the same for all options. Crossing Twys differ per distances							
Crossing Twy North of Centerfield Twy	SF	707400							
Crossing Twy South of Centerfield Twy	SF	283800							
Centerfield Twy	SF	806700							
Twy & Tln South of Rwy 6R-24L	SF	2084300							
Total new Taxiway & Taxilane		3882200	$33.61	$130,466,788					

Table AF-2
North Airfield Improvement Options-Detailed Assumptions

Description	Unit	Quantity	Unit Cost	Extended Cost	Round Up	Quantity	Reference		Comments
Service Road Cost				$3,993,202					
Total Taxiway & Taxilane & service road Cost				**$134,459,990**					
350'N Total Taxiway & Taxilane Demolished Area (quantities from 350'N Base Plan). Demolished area is updated as per Rick e-mail July 14, 2011	SF	1432100	$4.91	**$7,025,237**					
Option - 260' N (500' to 24R & 460' to 24L)									
Crossing Twy North of Centerfield Twy	SF	643091							
Crossing Twy South of Centerfield Twy	SF	261096							
Centerfield Twy	SF	806700							
Twy & Tln South of Rwy 6R-24L	SF	2084300							
Total new Taxiway & Taxilane		3795187	$33.61	$127,542,590					
Service Road Cost				$3,993,202					
Total Taxiway & Taxilane & service road Cost				**$131,535,793**					
Option - 100' N (400' to 24R & 400' to 24L)									
Crossing Twy North of Centerfield Twy	SF	514473							
Crossing Twy South of Centerfield Twy	SF	227040							
Centerfield Twy	SF	806700							
Twy & Tln South of Rwy 6R-24L	SF	2084300							
Total new Taxiway & Taxilane		3632513	$33.61	$122,075,696					
Service Road Cost				$3,993,202					
Total Taxiway & Taxilane & service road Cost				**$126,068,898**					
Total new Runways (Not including east Section of Runway 6R-24L-Existing 2000' x 150' modification)	**SY**	232589	**100N**	**200N**	**260N**	**300N**	**350N**	**400N**	
Total new Taxiways & Taxilanes	**SY**		**403613**	**417903**	**421687**	**424210**	**431,356**	**434509**	
Total new Runways, Taxiways & Taxilanes	**SY**		**636201**	**650492**	**654276**	**656799**	**663,944**	**667098**	
Storm Drain Modifications is estimated as per $66/SY of new Taxiways & Taxilanes &runways			**$41,989,293**	**$42,932,493**	**$43,182,237**	**$43,348,733**	**$43,820,333**	**$44,028,453**	
Electrical and navigation modification at & 58/SY			**$36,899,682**	**$37,728,555**	**$37,948,027**	**$38,094,341**	**$38,508,778**	**$38,691,671**	
Other utility modifications (fire, water, sewer….) which are affected mainly by construction of Taxilane D & E is estimated to be around $ 50/SY of Taxilane D & E construction per Exhibit 1	**SY**	187731	**$9,386,544**						
Option - 100' S (400' to 24R & 400' to 24L)									
Crossing Twy North of Centerfield Twy	SF	514473							
Crossing Twy South of Centerfield Twy	SF	227040							

Table AF-2
North Airfield Improvement Options-Detailed Assumptions

Description	Unit	Quantity	Unit Cost	Extended Cost	Round Up	Quantity	Reference		Comments
Centerfield Twy	SF	806700							
Twy & Tln South of Rwy 6R-24L	SF	2084300							
Total new Taxiway & Taxilane	SF	3632513	$33.61	122,075,696					
Service Road Cost				3,993,202					
Total Taxiway & Taxilane & service road Cost				**126,068,898**					
Total new Runways	**SY**	**256333**							
Total new Taxiways & Taxilanes	**SY**	**403613**							
Total new Runways, Taxiways & Taxilanes	**SY**	**659946**							
Storm Drain Modifications is estimated as per $66/SY of new Taxiways, Taxilanes, & Runways				$43,556,427					
Electrical and navigation modification at & 58/SY				$38,276,860					
Other utility modifications (fire, water, sewer….) which are affected mainly by construction of Taxilane D & E is estimated to be around $50/SY of Taxilane D &E construction per Exhibit 1	SY	187731		$9,386,544					
Option - 340' S (540' to 24R & 500' to 24L)		For 340' South option layout, the Twy & Tln south of Rwy 6R-24L is the same as 350' north, and Centerfield Twy are the same for all options. Crossing Twys differ per distances							
Crossing Twy North of Centerfield Twy	SF	694538			707400				
Crossing Twy South of Centerfield Twy	SF	283800			283800				
Centerfield Twy	SF	806700			806700				
Twy & Tln South of Rwy 6R-24L	SF	2084300			2084300				
Total new Taxiway & Taxilane		3869338	$33.61	$130,034,548	3882200				
Service Road Cost				$3,993,202					
Total Taxiway & Taxilane & service road Cost				**$134,027,750**					
Total new Taxiways & Taxilanes	**SY**	**429926**							
Total new Runways	**SY**	**256333**							
Total new Runways, Taxiways & Taxilanes	**SY**	**686260**							
Storm Drain Modifications is estimated as per $66/SY of new Taxiways, Taxilanes, & Runways				$45,293,147					
Electrical and navigation modification at & 58/SY				$39,803,068					
Other utility modifications (fire, water, sewer….) which are affected mainly by construction of Taxilane D & E is estimated to be around $ 50/SY of Taxilane D &E construction per Exhibit 1	**SY**	187731		**$9,386,544**					
340'S Total Taxiway & Taxilane Demolished Area (quantities from 350'N Base Plan). Demolished area is equal to 350'N	**SF**	1432100	$4.91	**$7,025,237**					

Source: Los Angeles World Airports and AECOM, 2011.

Table AF-3
Lincoln Blvd Modification - ROM Cost Estimate Table

Alternative	Demolish part of Lincoln Blvd	New Lincoln Blvd Construction Cost (Westchester Overpass, Lincoln Blvd tunnel)	Scoped Estimated Construction Cost	Contract Contingency @ 10% of Scoped Construction Cost	Soft Cost @ 27% of Total Construction Cost	Rounded Up Scoped Estimated ROM Cost
Alternative 1	$4,836,000	$39,846,000	$44,682,000	$4,468,200	$12,064,140	$61,210,000
Alternative 5	$4,836,000	$60,829,000	$65,665,000	$6,566,500	$17,729,550	$89,960,000
Alternative 6	$4,836,000	$28,221,000	$33,057,000	$3,305,700	$8,925,390	$45,290,000

Source: Los Angeles World Airports and AECOM, 2011.

Table AF-4
Lincoln Blvd New Route Construction per LF of Blvd

Description	Unit	Quantity	Unit Cost	Extended Cost	Round Up		Ref.
Flat section							
Clear & Grub	Acre x 100	0.3	$63	$20			p1007, i0010 &20
Topsoil stripping	CY	5.2	$1	$6			
unclassified excavation	BCY	41.7	$15.0	$625			
Hauling excavated material	LCY	60.9	$7.6	$463			p1022, i1016
Spreading dumped material	LCY	60.9	$2.3	$139			p1019, i0011
Screen excavated material	LCY	60.9	$5.4	$283	5.40		p1070, i350
Loading Disposal of unsuitable excavated material	LCY	15.2	$1.2	$18	1.20		
Disposal of unsuitable excavated material-Hauling	LCY	15.2	$21.4	$326			
Grading	SY	140.0	$0.5	$70			p1008, 0200
Subgrade preparation	SY	140.0	$3.0	$420			
Loading of suitable material for backfill	LCY	10.1	$1.2	$12	1.20		
Hauling of suitable material for backfill	LCY	10.1	$7.6	$77			p1022, i1016
Back fill by suitable screened material	LCY	10.1	$3.9	$40			p1018, i3320
Compact backfilled material	ECY	7.8	$0.6	$4			p1029, i5100
Water for compaction	ECY	7.8	$2.0	$15			p1030, i9040
Base Course 8" thk	SY	12.2	$17.0	$208	17.00		
Subbase Course 12" thk	SY	12.2	$17.7	$216			
Prime coat	SY	10.7	$5.2	$55	5.20		
Asphalt Pavement, 4" thk	SY	10.7	$28.0	$299	28.00		p1051,+ 25 mile hauling
PCC side walk,	SY	1.6	$33.0	$51	33.05		p1073 i0020
Curb & Gutter	LF	2.0	$14.0	$28	13.67		p1076, i0416
Marking & Painting	SF	3.0	$1.5	$5			
Concrete road barrier	LF	1.0	$60.0	$60			p1120, i1800e
Storm drain allowance	LS	1.0	$111.0	$111			
Utility (electrical system, sewer, water line) allowance	LS	1.0	$74.0	$74			
Landscape & planting modifications Allowance	LS	1.0	$38.0	$38	38.00		
Demolish Existing fence and install new fence	LF	2.0	$55.0	$110			
Total				**$3,773**			
Sloped Section							
Clear & Grub	Acre x 100	0.3	$63	$21			p1007, i0010 &20
Topsoil stripping	CY	5.4	$1	$6			
unclassified excavation	BCY	80.6	$15.0	$1,209			
Hauling excavated material	LCY	111.8	$7.6	$850			p1022, i1016
Spreading dumped material	LCY	111.8	$2.3	$255			p1019, i0011
Screen excavated material	LCY	111.8	$5.4	$604			p1070, i350
Loading Disposal of unsuitable excavated material	LCY	28.0	$1.2	$34			
Disposal of unsuitable excavated material-Hauling	LCY	28.0	$21.4	$598			
Grading	SY	146.0	$0.5	$73			p1008, 0200
Subgrade preparation	SY	146.0	$3.0	$438			
Loading of suitable material for backfill	LCY	10.5	$1.2	$13			
Hauling of suitable material for backfill	LCY	10.5	$7.6	$80			p1022, i1016

Table AF-4
Lincoln Blvd New Route Construction per LF of Blvd

Description	Unit	Quantity	Unit Cost	Extended Cost	Round Up		Ref.
Back fill by suitable screened material	LCY	10.5	$3.9	$41			p1018, i3320
Compact backfilled material	ECY	8.1	$0.6	$5			p1029, i5100
Water for compaction	ECY	8.1	$2.0	$16			p1030, i9040
Base Course 8" thk	SY	12.2	$17.0	$208			
Subbase Course 12" thk	SY	12.2	$17.7	$216			
Prime coat	SY	10.7	$5.2	$55			
Asphalt Pavement, 4" thk	SY	10.7	$28.0	$299			p1051 plus 25 mile hauling
PCC side walk,	SY	1.6	$33.0	$51			p1053 i0020
Curb & Gutter	LF	2.0	$14.0	$28			p1055, i0416
Marking & Painting	SF	3.0	$1.5	$5			
Concrete road barrier	LF	1.0	$60.0	$60			p1120, i1800e
Storm drain allowance	LS	1.0	$200.0	$200			
Utility (electrical system, sewer, water line) allowance	LS	1.0	$194.0	$194			
Landscape & planting modifications Allowance	LS	1.0	$115.0	$115			
Demolish Existing fence and install new fence	LF	2.0	$55.0	$110			
Total				**$5,782**			
Depressed Section							
Clear & Grub	Acre x 100	0.4	$63	$23			
Topsoil stripping	CY	5.9	$1	$8			
unclassified excavation	BCY	120.0	$15.0	$1,800			
Hauling excavated material	LCY	163.7	$7.6	$1,244			
Spreading dumped material	LCY	163.7	$2.3	$373			
Screen excavated material	LCY	163.7	$5.4	$884			
Loading Disposal of unsuitable excavated material	LCY	40.9	$1.2	$49			
Disposal of unsuitable excavated material-Hauling	LCY	40.9	$21.4	$876			
Grading	SY	160.0	$0.5	$80			
Subgrade preparation	SY	160.0	$3.0	$480			
Loading of suitable material for backfill	LCY	11.1	$1.2	$13			
Hauling of suitable material for backfill	LCY	11.1	$7.6	$85			
Back fill by suitable screened material	LCY	11.1	$3.9	$44			
Compact backfilled material	ECY	8.6	$0.6	$5			
Water for compaction	ECY	8.6	$2.0	$17			
Base Course 8" thk	SY	12.2	$17.0	$208			
Subbase Course 12" thk	SY	12.2	$17.7	$216			
Prime coat	SY	10.7	$5.2	$55			
Asphalt Pavement, 4" thk	SY	10.7	$28.0	$299			
PCC side walk,	SY	1.6	$33.0	$51			
Curb & Gutter	LF	2.0	$14.0	$28			
Marking & Painting	SF	3.0	$1.5	$5			
Concrete road barrier	LF	1.0	$60.0	$60			
Storm drain allowance	LS	1.0	$380.0	$380			4.76%
Utility (electrical system, sewer, water line) allowance	LS	1.0	$368.0	$368			4.61%

Table AF-4
Lincoln Blvd New Route Construction per LF of Blvd

Description	Unit	Quantity	Unit Cost	Extended Cost	Round Up		Ref.					
Landscape & planting modifications Allowance	LS	1.0	$220.0	$220			2.76%					
Demolish Existing fence and install new fence	LF	2.0	$55.0	$110								
Total				**$7,980**								
Options	**Unit**	**Total Blvd**	**Tunnel Length**	**Sloped Blvd Length**	**Depressed Blvd Length**	**Total Depressed & sloped & tunnel**	**Flat Blvd**	**Blvd Construction Cost (without Tunnel)**	**Lincoln Tunnel**	**New Westchester Overpass**	**Total NEW Lincoln Blvd Cost**	**Round Up**
100N	LF	3700	0	**600**	**250**	850	**2850**	**$16,217,374**	**$0**	**$0**	**$16,217,374**	**$16,220,000**
200N	LF	3700	200	**600**	**130**	930	**2770**	**$14,957,953**	**$8,000,000**	**$0**	**$22,957,953**	**$22,960,000**
300N	LF	3700	350	**600**	**280**	1230	**2470**	**$15,023,037**	**$14,000,000**	**$0**	**$29,023,037**	**$29,020,000**
400N	LF	3700	500	**600**	**450**	1550	**2150**	**$15,172,259**	**$20,000,000**	**$12,860,000**	**$48,032,259**	**$48,030,000**
Demolish part of Lincoln Blvd Per LF of Blvd												
Demolish Base & Subbase Course 18" thk	SY	12.2	$7.0	$86								
Demolish Asphalt Pavement, 4" thk	SY	10.7	$6.0	$64								
Demolish PCC side walk,	SY	1.6	$8.0	$12								
Demolish Curb & Gutter	LF	2.0	$5.0	$10								
Demolish Concrete road barrier	LF	1.0	$12.0	$12								
SD & Utility Removal @ 20 % demolition cost	LS	1.0	$20.0	$20								
Grading	SY	110.0	$0.5	$55								
Subgrade preparation	SY	110.0	$3.0	$330								
Loading of suitable material for backfill	LCY	17.5	$12.0	$210								
Hauling of suitable material for backfill	LCY	17.5	$6.0	$105								
Back fill by suitable screened material	LCY	17.5	$3.9	$69								
Compact backfilled material	ECY	13.4	$0.6	$8								
Water for compaction	ECY	13.4	$2.0	$27								
Total				**$1,006**								
Total Length of Lincoln Blvd to be demolished	LF	4010										
Total Demolition cost for Lincoln Blvd				$4,035,772.85	**$4,040,000**							
Westchester Blvd New Overpass												
unclassified excavation	BCY	10185	$15.0	$152,778	**Estimated Form work**			Dimensions scaled from Neol aerial photo				
Hauling excavated material	LCY	13241	$7.6	$100,630	Deck		145000					
Screen excavated material	LCY	13241	$7.1	$93,943	Sides and internal supports		57840					
Disposal of unsuitable excavated material-Loading	LCY	2648	$2.7	$7,150	Footings		9000					
Disposal of unsuitable excavated material-Hauling	LCY	2648	$21.4	$56,657	Side Bearing Walls		20000					
Loading of suitable material for backfill	LCY	3972	$2.7	$10,725	Columns		2560					
Hauling of suitable material for backfill	LCY	3972	$7.6	$30,189	Central barrier		1000					
Back fill by suitable screened material	LCY	3972	$3.9	$15,599	Struts		6960					
Compact backfilled material	ECY	3056	$0.6	$1,714	**Total**	**SF**	**242360**	SF				
Water for compaction	ECY	3056	$2.0	$6,057	**Estimated Concrete Work**							
Round Bar @ 300 Lb/CY	Lb	2060889	$1.4	$2,885,244	Deck		55000					
Formwork	SF	242360	$14	$3,393,040	Sides and internal supports		28920					

Table AF-4
Lincoln Blvd New Route Construction per LF of Blvd

Description	Unit	Quantity	Unit Cost	Extended Cost	Round Up		Ref.
Concrete	CY	6870	$150	$1,030,444	Footings		54000
Expansion & Construction joints	LS	1	$400,000	$400,000	Side Bearing Walls		30000
Slope adjustment of West chester blvd for 300'					Columns		5120
Removal of AC pavement	SY	7333	$6	$44,000	Central barrier		2000
Demolish PCC side walk,	SY	933	$8.0	$7,467	Struts		10440
Demolish Curb & Gutter	LF	1200	$5.0	$6,000	**Total**	**CY**	**6870**
Prime & Tack coat emulsion	SY	7333	$5.8	$42,607			
Asphalt Pavement, 4" thk	SY	7333	$20.9	$153,104			
PCC side walk,	SY	933	$26.0	$24,267			
Curb & Gutter	LF	1200	$11.1	$13,320			
Marking & Painting	SF	1800	$1.5	$2,700		643.9189131	
Allowance for traffic control @20%	LS	1	$800,000.0	$800,000		$7,308,729	
Total				**$9,277,634**			
Round Up				**$9,280,000**	$37,120	$128	644
Demolish Westchester Existing Overpass							
Excavate classified material on and around the bridge	BCY	5093	$2.7	$13,593			
Hauling excavated material	LCY	6620	$7.6	$50,315			
Spreading dumped material	LCY	6620	$2.3	$15,075			
Screen excavated material	LCY	6620	$7.1	$46,972			
Disposal of unsuitable excavated material-Loading	LCY	1655	$2.7	$4,418			
Disposal of unsuitable excavated material-Hauling	LCY	1655	$21.4	$35,411			
Loading of suitable material for back fill	LCY	26481	$2.7	$70,683			
Hauling of suitable material for back fill	LCY	26481	$7.6	$201,259			
Saw cut -Deck slab	LF	29000	$13.1	$380,886	Deck Slab saw cut is in 10'x10' segments so the total estimated deck slab saw cut length		
Saw cut - wall	LF	2500	$520.7	$1,301,850	Wall saw cut in 10'x10' segments so the total wall saw cut is estimated=2x(25*20+3*250)		
Saw Cut columns	LF	48	$694.3	$33,327			
Demolish Bridge Concrete structure	CY	5152	$120.0	$618,267			
Loading demolished concrete	CY	5152	$30.0	$154,567			
Hauling Demolished concrete	CY	5152	$37.5	$193,208			
Demolished concrete dumping charges	CY	5152	$60.0	$309,133			
Back fill by suitable screened material	LCY	26481	$3.9	$103,993			
Compact back filled material	ECY	20370	$0.6	$11,428			
Water for compaction	ECY	20370	$2.0	$40,378			
Total Construction Cost (Tunnel back fill by borrowed material)				$3,584,762			
Round Up (Tunnel back fill by borrowed material)				**$3,580,000**			
Total cost of demolishing of existing Westchester overpass and constructing new overpass				**$12,860,000**			
Option 260'							
Total Demolished section as per Exh. 1	4290						

Table AF-4
Lincoln Blvd New Route Construction per LF of Blvd

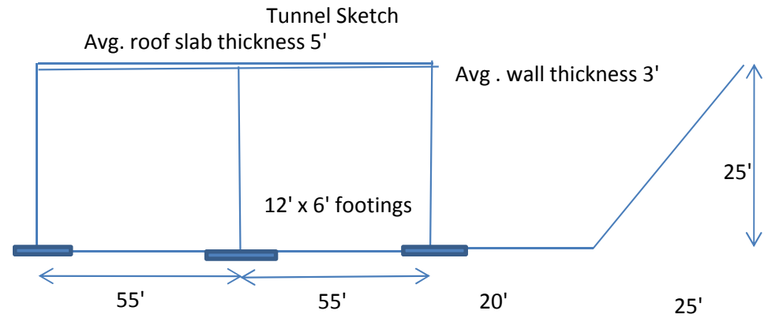
Description	Unit	Quantity	Unit Cost	Extended Cost	Round Up		Ref.					
Total Rerouted including slope, depressed & tunnel	6080											
Options	**Unit**	**Total Blvd**	**Tunnel Length**	**slopped Blvd Length**	**Depressed Blvd Length**	**Total Depressed & sloped & tunnel**	**Flat Blvd**	**Blvd Construction Cost (without Tunnel)**	**Lincoln Tunnel**	**New Westchester Overpass**	**Total NEW Lincoln Blvd Cost**	**Round Up**
100N	LF	6080	0	**600**	**250**	850	**5230**	**$25,197,069.38**	**$0**	**$0**	**$25,197,069**	**$25,200,000**
200N	LF	6080	200	**600**	**130**	930	**5150**	**$23,937,648**	**$8,000,000**	**$0**	**$31,937,648**	**$31,940,000**
260N	LF	6080	290	**600**	**220**	1110	**4970**	**$23,976,699**	**$11,600,000**	**$0**	**$35,576,699**	**$35,580,000**
300N	LF	6080	350	**600**	**280**	1230	**4850**	**$24,002,732**	**$14,000,000**	**$0**	**$38,002,732**	**$38,000,000**
350'N (as per Lincoln Blvd 350' N 40 scale)	LF		420	**1500**	**2550**	4470	**2250**	**$37,511,375**	**$16,800,000**	**$0**	**$54,311,375**	**$54,310,000**
Total Demolish Cost	**$4,317,572.45**											

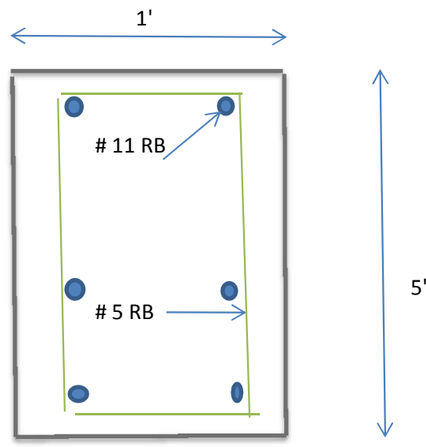
Source: Los Angeles World Airports and AECOM, 2011.

Table AF-5
Lincoln Blvd - Subgrade Segment

Description 110' wide X 25' Height X 1' Long	Unit	Quantity	Unit Cost	Extended Cost	Round Up	Ref.
unclassified excavation	BCY	187	$15.0	$2,806		
Hauling excavated material	LCY	243	$7.6	$1,859		p1022, i1016
Screen excavated material	LCY	243	$7.1	$1,725		p1070, i350
Disposal of unsuitable excavated material-Loading	LCY	49	$2.7	$131		
Disposal of unsuitable excavated material-Hauling	LCY	49	$21.4	$1,040		
Subgrade preparation	SY	130	$3.0	$390		
Loading of suitable material for backfill	LCY	85	$2.7	$228		
Hauling of suitable material for backfill	LCY	85	$7.6	$646		p1022, i1016
Back fill by suitable screened material	LCY	85	$3.9	$332		p1018, i3320
Compact backfilled material	ECY	65	$0.6	$36		p1029, i5100
Water for compaction	ECY	65	$2.0	$129		p1030, i9040
Round Bar @ 300 Lb/CY	Lb	11011	$1.4	$15,416		
Formwork	SF	296	$20	$5,920		p68, i2350
Concrete	CY	37	$150	$5,506		
Expansion & Construction joints	LS	1	$1,342	$1,342		
Storm drain allowance approximately @ 5%	LS	1	$1,600	$1,600		
electrical system allowance approximately@ 2 %	LS	1	$600	$600		
Total				**$39,706**		
Round Up	**Per Tunnel LF**			**$40,000**		
Options Cost						
100 N, as per EXH-1 the tunnel length is 0'	LF	0	$40,000	**$0**		
200 N, as per EXH-2 the tunnel length is 200'	LF	200	$40,000	**$8,000,000**		
260 N,	LF	290	$40,000	**$11,600,000**		
300 N, as per EXH-3 the tunnel length is 350'	LF	350	$40,000	**$14,000,000**		
350N, (as per Lincoln Blvd 350' N 40 scale)	LF	420	$40,000	**$16,800,000**		
400 N, as per EXH-4 the tunnel length is 500'	LF	500	$40,000	**$20,000,000**		

Source: Los Angeles World Airports and AECOM, 2011.





Total RB per 5 CF of concrete is 6' off #11 and 12' off #5

11	LB/CF
284	LB/CY
177	KG/CM
0.62	

Table AF-6
Additional Assumptions Regarding Runway 6R-24L 100' South

Description	Unit	Quantity	Unit Cost	Extended Cost	Round Up	Comments
Demolish Runway 6R-24L-Existing 10285' x 150'	SF	1542750	8.66	$13,356,095	**$13,360,000**	For Runway Assume 19" PCC over 12" Econocrete over 12"aggregate base course. For shoulder assume 4" AC over 12" aggregate base.
Demolish Taxiways as per Arial figure 6	SF	1908390	4.9	$9,361,701	**$9,360,000**	
						Existing Runway is 8925' x 150'
Construct Runway 6R-24L-NEW 11535' x 200'	SF	2307000	$37.4	$86,297,634	**$86,300,000**	Avg width of shoulder and erosion control is taken 40'
Construct New Taxilanes & Taxiways, 100' wide-Option A	TLF	36921	$3,360.6	$124,078,210	$124,080,000	
Construct New Taxilanes & Taxiways, 100' wide-Option B		34740	$3,360.6	$116,748,653		3 mile haul avg. For backfilling screened material recovered from excavation work
Section of Taxilane D constructed by changing pavement markings and paintings	SF	65595	$6.0	$393,570	$390,000	
Construct New service road by changing pavement markings and paintings	SF	34359	$6.0	$206,154	$210,000	
Total construction of new Taxiways, Taxilanes, & Service Road - A					**$124,680,000**	
Total construction of new Taxiways, Taxilanes, & Service Road - B				**$117,348,653**		
Storm Drain Modifications is estimated as per $66/SY of new Taxiways, Taxilanes, & Runways - A	SY		66	$0	**$0**	

Table AF-6
Additional Assumptions Regarding Runway 6R-24L 100' South

Description	Unit	Quantity	Unit Cost	Extended Cost	Round Up	Comments
Storm Drain Modifications is estimated as per $66/SY of new Taxiways, Taxilanes, & Runways - B	SY	642333	66	$42,394,000	**$42,390,000**	
Electrical and navigation modification at & 58/SY - A	SY	666567	58	$38,660,867	**$38,660,000**	
Electrical and navigation modification at & 58/SY - B	SY	642333	58	$37,255,333	**$37,260,000**	
Other utility modifications (fire, fuel, water, sewer….) which are affected mainly by construction of Taxilane D & E is estimated to be around $50/SY of new Taxilane construction - A	SY	254511	50	$12,725,556	**$12,730,000**	
Other utility modifications (fire, fuel, water, sewer….) which are affected mainly by construction of Taxilane D & E is estimated to be around $50/SY of new Taxilane construction - B	SY	205922	50	$10,296,111	**$10,300,000**	
Total New Taxiways, Taxilanes, & Runways Option A	SY	666567				
Total New Taxiways, Taxilanes, & Runways Option B		642333				
Removal of Asphalt Pavement 4" thick	SY	313588	$6.0	$1,881,529		
Asphalt Concrete 4" thick	SY	313588	$18.0	$5,644,586		
				$7,526,115	**$7,530,000**	
No Increase in Separation Option - 1250' 6R-24L extension						
Demolish Taxiways as per Arial figure	SF	328074	$4.9	**$1,609,383**		
Construct New Taxilanes & Taxiways	SF	1275812	$33.6	$42,875,455		
Section of Taxilane D constructed by changing pavement markings and paintings 2191'	SF	32865	$6.0	$197,190		
Total Taxilane & Taxiway Construction Cost				**$43,072,645**		
Storm Drain Modifications is estimated as per $66/SY of new Taxiways, Taxilanes, & Runways	SY	195924	66	**$12,930,955**		
Electrical and navigation modification at & 58/SY of new Taxiways, Taxilanes, & Runways	SY	195924	58	**$11,363,566**		

Table AF-6
Additional Assumptions Regarding Runway 6R-24L 100' South

Description	Unit	Quantity	Unit Cost	Extended Cost	Round Up	Comments
Other utility modifications (fire, fuel, water, sewer….) which are affected mainly by construction of Taxilane D & E is estimated to be around $50/SY of new Taxilane construction	SY	56467	50	$2,823,333		
No Increase in Separation Option - 835' 6R-24L extension						
Construct New Taxilanes & Taxiways	SF	1192812	$33.6	$40,086,124		
Section of Taxilane D constructed by changing pavement markings and paintings 2191'	SF	32865	$6.0	$197,190		
Total Taxilane & Taxiway Construction Cost				**$40,283,314**		
Construct Runway 6R-24L Extension 835'*150 and 2000' construction of runway for slope adjustment				**$12,409,000**		
Storm Drain Modifications is estimated as per $66/SY of new Taxiways, Taxilanes, & Runways	SY	179785	66	**$11,865,788**		
Electrical and navigation modification at & 58/SY of new Taxiways, Taxilanes, & Runways	SY	179785	58	$10,427,511		
Other utility modifications (fire, fuel, water, sewer….) which are affected mainly by construction of Taxilane D & E is estimated to be around $50/SY of new Taxilane construction	SY	56467	50	$2,823,333		
100' S Option						
New Taxiways and Taxilanes layout is adjusted as per 260' north option and the area will be equal to 100' north option plus section of Taxilane E (which is not constructed in option 100' north but is constructed in 100' south) - Option A	**SF**	**3877491**	**$33.6**	**$130,308,521**		
Total Service Road Cost (11258' x 25') - Total Construction				**$3,993,202**		
Total construction of new Taxiways, Taxilanes, & Service Road A				**$134,301,723**		

Table AF-6
Additional Assumptions Regarding Runway 6R-24L 100' South

Description	Unit	Quantity	Unit Cost	Extended Cost	Round Up	Comments
New Taxiways and Taxilanes layout is adjusted as per 260' north option and the area will be equal to 100' north option plus section of Taxilane E (which is not constructed in option 100' north but is constructed in 100' south) - Option B	**SF**	**3659391**	**$33.6**	**$122,978,964**		
Total Service Road Cost (11258' x 25') - Total Construction				**$3,993,202**		
Total construction of new Taxiways, Taxilanes, & Service Road B				**$126,972,166**		
Storm Drain Modifications is estimated as per $66/SY of new Taxiways & Taxilanes & Runways - A	**SY**	**687166**	**66**	**$45,352,931**		
Storm Drain Modifications is estimated as per $66/SY of new Taxiways & Taxilanes & Runways - B	**SY**	**662932**	**66**	**$43,753,531**		
Electrical and navigation modification at & 58/SY - A	**SY**	**687166**	**58**	**$39,855,606**		
Electrical and navigation modification at & 58/SY - B	**SY**	**662932**	**58**	**$38,450,073**		
No Increase in Separation Option - 1250' 6R-24L extension						
Increase in taxiway and taxilanes as per new option 260'N layout (for details refer to electronic file)	SF	554500				
Total Taxilane & Taxiway Construction Cost	SF	1830312	$33.6	$61,510,207		
Total Service Road Cost (11258' x 25') - Total Construction				$3,993,202		
Total construction of new Taxiways, Taxilanes, & Service Road B				$65,503,410		
Storm Drain Modifications is estimated as per $66/SY of new Taxiways, Taxilanes, & Runways	SY	257535	$66.0	$16,997,288		
Electrical and navigation modification at & 58/SY of new Taxiways, Taxilanes, & Runways	SY	257535	$58.0	$14,937,011		

Table AF-6
Additional Assumptions Regarding Runway 6R-24L 100' South

Description	Unit	Quantity	Unit Cost	Extended Cost	Round Up	Comments
No Increase in Separation Option - 835' 6R-24L extension						
Total Taxilane & Taxiway Construction Cost	SF	1747312	$33.6	$58,720,876		
Total Service Road Cost (11258' x 25') - Total Construction				$3,993,202		
Total construction of new Taxiways, Taxilanes, & Service Road B				$62,714,078		
Storm Drain Modifications is estimated as per $66/SY of new Taxiways, Taxilanes, & Runways	SY	241396	$66.0	$15,932,121		
Electrical and navigation modification at & 58/SY of new Taxiways, Taxilanes, & Runways	SY	241396	$58.0	$14,000,955		
No Increase in Separation Option 835' 6R-24L extension Alt-4						
Total construction of new Taxiway, TXL Alt-4	SF	65300	$33.6	**$2,194,498**		
Service Road	SY					
Demolish Existing Pavements						
Concrete Saw Cut (AC & PCC)	LF	6	12.0	$72		
Removal of Runway Concrete pavement & AC pavement	SY	1	$20.0	$20		
Total			**$/SY**	$92		
Construct Service Road						
Crushed aggregate base course, 12" thick	CY/SY	0.3	$47.0	$16		
Asphalt Concrete 4" thick	SY	1.0	$18.0	$18		
Runway Painting	SF/SY	1.4	$1.5	$2		
Total			$/SY	$36		
Unit Service Road Cost			**$/SY**	**$128**		
			$/SF	**$14.19**		
Total Service Road Cost (11258' x 25')		**281450**		**$3,993,202.18**		

Source: Los Angeles World Airports and AECOM, 2011.

Table AF-7
North Airfield Improvement-Demolition
Terminal 1 Modification

Description	Unit	Quantity	Unit Cost	Extended Cost	Ref.	Comments
Demolition of Concourse Bldg , 177' L x 125' W x 40' H	CF	885000	$1.0	$885,000	p47, i0020	
Saw cut -Floor slab	LF	1077	$8.3	$8,932	p96, i0400 & 0420	Total Concrete Struts length= 8*125+5*177=1885 LF.
Saw cut - wall	LF	80	$52.6	$4,208		Total Concrete Struts Volume
Saw cut -Struts	LF	6	$13.1	$72	p96, i0400 & 0420	Concrete Strut section is 1' x 1' so the demolished volume will be =1885x1/27=70 CY
Demolish Piles	VLF	80	$20.0	$1,600	p43, 0500e	Total Concrete Slab volume= 177x125*8/12/27=546 CY
Demolish Concrete	CY	804	$150.0	$120,600	p64, i0060	Total Concrete Foundation Volume= 8x5x3x4x3/27=54CY
Load, Haul dump, wheeled	CY	2165	$72.5	$156,930	p50, i2205	
Loading demolished concrete & Building	CY	4329	$30.0	$129,873	p51, i3080e	Total no. of Piles=8x5=40
Hauling Demolished concrete & Building	CY	4329	$37.5	$162,341	p51, i5100	Total demolished area= 3 floors (1st+2nd+roof) + North, east & west walls = 3x125x177+(2x177+125)x40=85535 2 Cf/Sf is assumed as demolished volume=85535x2/27=6336 CY
Demolished concrete dumping charges	CY	4329	$60.0	$259,746	Estimated	
Lime treated subgrade 18"	SY	2458	$21.0	$51,620		1729303
Econocrete, 12" thick	SY	2458	$48.0	$118,000		
Plain pcc pavement (p-501), 19" thick	SY	2458	$105.0	$258,125		
Pavement Painting modifications	SF	12000	$6.0	$72,000		
Precast concrete wall, 4" thk	SF	5463	$48.0	$262,224	p93, i0150	Rebuild cost from item 18 to 26
Stud Wall	LF	280	$25.0	$7,000	p156, i6210	
5/8" Gyp. Board	SF	5463	$1.8	$9,833	p319, i2195	
6" Insulation	SF	5463	$1.1	$6,009	p214, i0186	
Window frame	SF	882	$24.0	$21,168	p278, i0100	
Glazing	SF	882	$20.0	$17,640	P301, I0900	
Bracing line 8 spans	LF	1152	$44.5	$51,264		Two floors on line 8 needs bracing, each span by double 3" angel, the total length for 8+1 span (each span is taken 30'W x 12.5'H) =9*4*32 =1152'
Stairs	Riser	40	$620.0	$24,800		
Roof	SF	1250	$3.0	$3,750	**$2,632,737**	62
Allowance for false ceiling, paintings, patching	LS	1	$1,500,000.0	$1,500,000		
Allowance for fire fighting / fire life safety	LS	1	$2,000,000.0	$2,000,000		
Allowance for HVAC & Plumbing modification	LS	1	$4,000,000.0	$4,000,000	$403,689	131637
Allowance for Electrical, communication, security, modification	LS	1	$3,000,000.0	$3,000,000		15.33%
Relocating bridges	LS	1	$1,500,000.0	$1,500,000		220
Total				**$14,632,737**		407100
As it is decided for the cost of terminal demolition and rebuild a separate table be prepared above estimate is adjusted for the cost of demolition of Terminals Bus Gates, warehouses and other bldgs. The Allowances were for upgrading of Terminal one which are not included for only demolition costs.						
Total Demolition Cost without Allwances				**$2,632,737**		
5% allowance for utility disconnections and modificatios		**5%**		$131,637		
Total Demolition Cost				$2,764,373		
Terminal 1 demolished section app. area			**SF**	44,250		
Avg Demolition Bare cost (Assumed 2 story Concourse)				$62		22125
The avg demolition cost including 10% contingency, 12% General Contractor O&P and 27% LAWA soft cost will be	SF			$98	Per SF	30

Table AF-7
North Airfield Improvement-Demolition
Terminal 1 Modification

Description	Unit	Quantity	Unit Cost	Extended Cost	Ref.	Comments
ROM Estimated Terminals Demolition Cost				**$100**	**Per SF**	
						6.1
Other building demolition cost						The construction cost of demolished buildings is not included in this estimate
Demolition of Bus Gate Bldg ,						Bus gates are similar to Terminals
Demolish bus gate Bldg , 170' L x 70' W x 30' H	CF	357000	$1.0	$357,000	p47, i0020	
Demolish Piles	VLF	32	$20.0	$645	p43, 0500e	
Demolish Concrete	CY	324	$150.0	$48,649	p64, i0060	
Load, Haul dump, wheeled	CY	873	$72.5	$63,304	p50, i2205	
Loading demolished concrete & Building	CY	873	$30.0	$26,195	p51, i3080e	
Hauling Demolished concrete & Building	CY	873	$37.5	$32,743	p51, i5100	
Demolished concrete dumping charges	CY	873	$60.0	$52,389	Estimated	
Lime treated subgrade 18"	SY	1322	$21.0	$27,764		
Econocrete, 12" thick	SY	1322	$48.0	$63,467		
Plain pcc pavement (p-501), 19" thick	SY	1322	$105.0	$138,833		
Pavement Painting modifications	SF	2400	$6.0	$14,400		
				$825,390		
Utility disconnecting cost allowance @ 5%		5%		$41,269		
Total Demolition Cost				$866,659	36	
Bus Gate app. area			**SF**	23,800		
Avg Demolition Bare cost (Assumed 2 story Concourse)				**$36**		
						This is cheaper than Terminal 1 because this is total demolition. Terminals are assumed to be partially demolished and there are reconstructon cost and patching also Terminal height is 40' and the Bus Gate Height is 30'
Demolition of Warehouse/Miscellaneous						
Demolish warehouse 180'L x 100'W x 40'H	CF	720000	$1.0	$720,000		
Demolish Piles	VLF	60	$20.0	$1,200		assume 1' Dia pile
Demolish Concrete	CY	654	$150.0	$98,115		
Loading demolished concrete & Building	CY	2152	$30.0	$64,564		
Hauling Demolished concrete & Building	CY	2152	$37.5	$80,705		
Base Course 8" thk	SY	12.2	$20.4	$249		AF 1.2 is used to adjust unit prices from Lincol. Blvd as the demolished buildings are scattered
Prime coat	SY	10.7	$6.2	$67		
Asphalt Pavement, 4" thk	SY	10.7	$33.6	$358		
Total				**$965,259**	54	
Allowance for utility cut outs @ 5% demolition cost	LS	5%		$48,263		
Total Demolition Cost				$1,013,522	$56	$/SF
Warehouse app. Volume 180'L x 100'W x 40'H=	CF	720000				
Avg Demolition Bare cost	**$/CF**	**$1.4**				

Table AF-7
North Airfield Improvement-Demolition
Terminal 1 Modification

Description	Unit	Quantity	Unit Cost	Extended Cost	Ref.	Comments
100'N, 200'N, 260'N, 300'N, 400'N and No. Sep. Option Buildings demolition cost						
For 2 Bus Gates 170' x 70 'x30' and one Bus Gate 120'x40'x30'	SF	57200	$36	**$2,082,895.69**		Bus Gates are equal to two story buildings
Cost for other buildings	CF	282460	$1.4	**$397,610**		
Total demolition cost				**$2,480,506**		
Total Buildings demolition cost North (Except 350'N) & No. Separation options				**$2,480,506**		$5,016,071.43
Options: 100' S & 350' N						
The demolition limit for 350'N and 100'S SPAS options are the same and is 1052' from 6R-24L ctr line. For 350'N option this distance is 1016'. The Facilities demolished in all these cases are the same.						
Bus Gates 2-170x70x30 plus 2-120x40x30	SF	66800	$36	$2,432,472.59		Assumed 2 story Bus Gate
Cost for other demolished warehouses, hangers, etc.	CF	1775460	$1.4	$2,499,261.09		
Total demolition cost				**$4,931,734**		
Total Buildings demolition cost 100' S & 350' N Options				**$4,931,734**		7856250
Option 340'S						
The demolition limit for 340'S is 1292' from 6R-24L ctr line						
Bus Gates 2-170x70x30 plus 3-120x40x30	SF	76400	$36	$2,782,049		
Cost for other demolished warehouses, hangers, etc.	CF	2894460	$1.4	$4,074,443		
Tank Farm, modifications	LS	1	$1,000,000	$1,000,000		
Total Buildings demolition cost 340' S Option				**$7,856,493**		

Source: Los Angeles World Airports and AECOM, 2011.

Table AF-8
Removal/Filling of Abandoned Tunnel Under North Airfield

Description	Unit	Quantity	Unit Cost	Extended Cost	Ref.	Comments	
Excavate classified material on and around the tunnel	BCY	76148	$2.7	$ 203,249	p1013, i0250 & 0020	Runway pavement & shoulder on the tunnel demolition is included in pertinent item. 10% is added for excavation ramps.	
Hauling excavated material	LCY	98992	$7.6	$ 752,339	p1022, i1016	Assume excavated material is hauled 0.5 mile (1 mile cycle) to a dumping area for screening.	
Spreading dumped material	LCY	98992	$2.3	$ 225,405	p1019, i0011	1.3 is excavated soil expansion factor	
Screen excavated material	LCY	98992	$7.1	$ 702,348	p1070, i350	Assume 80% of excavated material is recycled, and 20% needs to be disposed.	
Disposal of unsuitable excavated material-Loading	LCY	19798	$2.7	$ 52,845			
Disposal of unsuitable excavated material-Hauling	LCY	19798	$21.4	$ 423,586		50 miles Cycle	
Loading of suitable material for back fill	LCY	79194	$2.7	$ 211,379			
Hauling of suitable material for back fill	LCY	79194	$7.6	$ 601,871	p1022, i1016	0.5 mile haul	
Saw cut -roof slab	LF	14717	$71.2	$ 1,048,042	p96, i0400 & 0420	Saw cut segments are taken 10'x10' for roof slab and wall will have 3 x 720 longitudinal and 3x72x4 vertical cuts and 2x120.4 for end walls	
Saw cut - wall	LF	3265	$711.7	$ 2,323,486	p96, i0800, 0820	Avg wall thickness is 4.1'	
Demolish Concrete roof & wall sections	CY	17293	$150.0	$ 2,593,929	p64, i0060	Demolished to one Cy pieces.	
Loading demolished concrete	CY	17293	$30.0	$ 518,786	p51, i3080e	Shovel/excavator rental is about $1500, assuming 50 CY/day or 7 CY/hr	
Hauling Demolished concrete	CY	17293	$37.5	$ 648,482	p51, i5100	50 mile hauling	
Demolished concrete dumping charges	CY	17293	$60.0	$ 1,037,571		Estimated from Google	
Back fill by suitable screened material	LCY	79194	$3.9	$ 310,993	p1018, i3320		
Back fill by borrowed material	LCY	152110	$49.8	$ 7,578,118	p1019, i0035	Borrow material from 20 mile Note: this could be used from new Runway excavation left over	
Compact back filled material	ECY	117008	$0.6	$ 65,641	p1029, i5100		
Water for compaction	ECY	117008	$2.0	$ 231,933	p1030, i9040		
Total Construction Cost (Tunnel back fill by borrowed material)				**$ 19,530,003**		$8,170,296	
Round Up (Tunnel back fill by borrowed material)				**$ 19,530,000**		$27,125	
Most probably Tunnel back fill will be from left over materials from runway projects. In this case the back fill cost will be less.						Estimated volume of tunnel and excavation over and around it	
	LCY	152110	$14.2	$ 2,159,376		162800	CY
Total Construction Cost (Tunnel back fill by left over materials from runway projects)				**$ 14,111,261**			
Round Up (Tunnel back fill by left over materials from runway projects)				**$14,111,000**			

Source: Los Angeles World Airports and AECOM, 2011.

Table T-1
Terminals Cost Comparison Table

Description	Existing Floor Area (SF)	Demolished Floor Area (SF)	New Construction Floor Area (SF)	Total Floor Area (SF)	Demolition & Excavation Cost ($)	Rebuild Cost ($)	Total Cost ($)
Alternatives 1, 2, and 6							
Terminal Zero Concourse and Passenger Processing	0	0	330,000	330,000	$0	$396,000,000	$396,000,000
Terminal One Concourse	138,000	24,000	0	114,000	$2,400,000	$0	$2,400,000
Terminal Two Concourse	306,000	0	0	306,000	$0	$0	$0
Terminal Three Concourse	279,000	242,000	186,000	223,000	$24,200,000	$223,200,000	$247,400,000
Bradley West Northen Concourse	123,500	0	113,800	237,300	$0	$136,560,000	$136,560,000
Midfield Satellite Northen Concourse	328,900	0	249,400	578,300	$0	$299,280,000	$299,280,000
Total	**1,175,400**	**266,000**	**879,200**	**1,788,600**	**$26,600,000**	**$1,055,040,000**	**$1,081,640,000**
Alternative 7							
Terminal Zero Concourse and Passenger Processing	0	0	325,000	325,000	$0	$390,000,000	$390,000,000
Terminal One Concourse	138,000	24,000	0	114,000	$2,400,000	$0	$2,400,000
Terminal Two Concourse	306,000	0	0	306,000	$0	$0	$0
Terminal Three Concourse	279,000	242,000	168,000	205,000	$24,200,000	$201,600,000	$225,800,000
Bradley West Northen Concourse	123,500	0	64,400	187,900	$0	$77,280,000	$77,280,000
Midfield Satellite Northen Concourse	328,900	0	190,700	519,600	$0	$228,840,000	$228,840,000
Total	**1,175,400**					**$897,720,000**	**$924,320,000**
Alternative 5							
Terminal Zero Concourse and Passenger Processing	0	0	330,000	330,000	$0	$396,000,000	$396,000,000
Terminal One Concourse	138,000	24,000	0	114,000	$2,400,000	$0	$2,400,000
Terminal Two Concourse	306,000	0	0	306,000	$0	$0	$0
Terminal Three Concourse	279,000	242,000	186,000	223,000	$24,200,000	$223,200,000	$247,400,000
Bradley West Northen Concourse	123,500	0	73,300	196,800	$0	$87,960,000	$87,960,000
Midfield Satellite Northen Concourse	328,900	0	204,800	533,700	$0	$245,760,000	$245,760,000
Total	**1,175,400**					**$952,920,000**	**$979,520,000**
Alternative 3							
New Linear Concourse	0	1,245,000	1,400,000	1,400,000	$236,500,000	$1,235,900,000	$1,472,400,000
New Terminal Processors (1-4)	0	2,980,000	2,151,000	2,151,000	$319,200,000	$2,680,700,000	$2,999,900,000
South Terminal Improvements						$182,600,000	$182,600,000
Total							**$4,654,900,000**

Notes:

1-For Terminals 1 & 2 there will not be any new construction.

2-For Alternatives 1, 2 and 6, the distance between parking limit (south side of service road) to terminal buildings is assumed 100' (i.e aircraft park around northern ends of concourses).

3-Based on data provided in "SPAS Terminal Assumptions", T0 is two story, T1 is two story, T2 is three and half story, and T3 is three story.

4-All costs shown in table include "contingency" and "soft" (i.e design/engineering) costs.

5-Demolition & Construction Costs estimated to be $100/SF based on projects at LAX and other areas.

6-Exisiting floor area for Midfield Satellite Concourse refers to floor area that would exist in the future independent of SPAS.

Source: Los Angeles World Airports and AECOM, 2011.

Table GA-1
Ground Access Cost Summary (Alternatives 1, 2, 8, and 9)

Improvement (See Table GA-2 for details)	Cost Components				Alternatives			
							Alternative 9	
	Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Alternatives 1 and 2	Alternative 8	Non-APM Impvmts	APM
	(A)	B=(Cont.%) x (A)	C=(27%) x (A + B)	D=(A+B+C)				
96th Street Bridge Realignment	$ 19,000,000	$ 3,000,000	$ 6,000,000	$ 28,000,000	$ 28,000,000	$ 28,000,000	$ 28,000,000	
98th Street Transportation Center	$ 143,000,000	$ 21,000,000	$ 44,000,000	$ 208,000,000	$208,000,000	$ 208,000,000	$ 208,000,000	
Parking Lot C	$0	$0	$0	$0				
Busway	$57,000,000	$9,000,000	$18,000,000	$84,000,000	$84,000,000	$84,000,000		
Busway Stations	$ 10,000,000	$ 1,000,000	$ 3,000,000	$ 14,000,000	$ 14,000,000	$ 14,000,000		
Manchester Square Parking	$ 71,000,000	$ 11,000,000	$ 22,000,000	$ 104,000,000	$104,000,000			
Manchester Square - Site Prep and Public Parking	$ 63,000,000	$ 9,000,000	$ 20,000,000	$ 92,000,000		$ 92,000,000	$ 92,000,000	
Busway - Additional busway in Manchester Square	$ 14,000,000	$ 2,000,000	$ 4,000,000	$ 20,000,000		$ 20,000,000		
Manchester Square - ConRAC and Service Site Parking	$ 284,000,000	$ 43,000,000	$ 88,000,000	$ 415,000,000				
APM Guideway Structure - Fixed Facility	$ 80,000,000	$ 12,000,000	$ 24,000,000	$ 116,000,000				$ 116,000,000
CTA Parking Garage Demo/Rebuild for APM	$ 75,000,000	$ 11,000,000	$ 23,000,000	$ 109,000,000				$ 109,000,000
APM Stations - Fixed Facility	$ 79,000,000	$ 12,000,000	$ 24,000,000	$ 115,000,000				$ 115,000,000
APM Maintenance Facility - Manchester Square	$ 43,000,000	$ 7,000,000	$ 14,000,000	$ 64,000,000				$ 64,000,000
Additional Employee Parking - "Avis Lot"	$ 30,000,000	$ 4,000,000	$ 9,000,000	$ 43,000,000		$ 43,000,000	$ 43,000,000	
APM Operational System Cost Estimate	$ 325,000,000	$0	$0	$ 325,000,000				$ 325,000,000
Total Estimated Costs for Alternatives					**$438,000,000**	**$ 489,000,000**	**$ 371,000,000**	**$ 729,000,000**

Source: Los Angeles World Airports and AECOM, 2011.

Table GA-2
Ground Access Cost Detail (Alternatives 1, 2, 8, and 9)

Improvement	Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
	(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
96th Street Bridge Realignment					
Demolish existing structures east of Sky Way	$ 2,800,000	$ 420,000	$ 869,400	$ 4,089,400	There are three low-rise structures in the footprint. Estimate 400,000 sq. ft. of demolition at $7 per.
96th Street Bridge Demolition	$ 5,500,000	$ 825,000	$ 1,707,750	$ 8,032,750	Demolish the existing 96th Street Bridge, ramps and other supporting roads on the site. The. Includes an allowance for traffic maintenance during the period.
Site Preparation / Utilities	$ 2,250,000	$ 337,500	$ 698,625	$ 3,286,125	Demolish existing hardscape and landscape (5-acres). Demolish and relocate utilities including the above ground electrical lines, protect the sewer outfall(s), and implemen any necessary storm water drainage modifications.
Realign Sky Way leading to / from the CTA	$ 8,800,000	$ 1,320,000	$ 2,732,400	$ 12,852,400	Sky Way is realigned to the east, in what is currently the eastern half of Park One. The new roadway to the lower level provides one lane from southbound Sepulveda Blvd. and one lane from westbound 96th stree bridge. The new Sky Way roadway will widen to four lanes as it approaches World Way. A new signalized intersection will be created approximately 600-feet east of the current signal near Terminal 1. The new roadway to the upper level will provide one lane from southbound Sepulveda Blvd. and one lane from westbound 96th street bridge. The new sky way roadway swill widen to three lanes as it approaches World Way.
Subtotal	**$ 19,350,000**	**$ 2,902,500**	**$ 6,008,175**	**$ 28,260,675**	
Facility Total: Rounded	**$ 19,000,000**	**$ 3,000,000**	**$ 6,000,000**	**$ 28,000,000**	
98th Street Transportation Center					
Site Preparation / Utilities					
Demolish existing structures between 96th St. and 98th St.	$ 1,000,000	$ 150,000	$ 310,500	$ 1,460,500	An allowance to demolish existing low-rise buildings on the site.
Relocate DWP Electrical Station	0	0	0	0	As of this estimate date, the 98th Street Transportation Facility does not impact the DWP Electrical Station. Should the facility footprint or site conditions change, this station may be impacted and costs may be incurred.
Site Preparation / Utilities	$ 6,300,000	$ 945,000	$ 1,956,150	$ 9,201,150	Demolish existing hardscape and landscape (14-acres). Demolish and relocate utilities including the above ground electrical lines, protect the sewer outfall(s), and implemen any necessary storm water drainage modifications.
Subtotal	**$ 7,300,000**	**$ 1,095,000**	**$ 2,266,650**	**$ 10,661,650**	
Passenger Service Area (PSA)					
Passenger Service Area	$ 23,300,000	$ 3,495,000	$ 7,234,650	$ 34,029,650	This estimate is based upon Program-Level information and broad planning guidelines. Constructs the Passenger Service Area (CSA) on the 2nd level of the garage. The enclosed PSA is about 85,000 sq. ft. ; and provides concessions space, a large lobby for meet-n-greet, restrooms, etc. Includes passenger circulation. Finishes are "terminal quality;" and FIDS and CCTV systems are included. Also including is building maintenance office space.

Table GA-2
Ground Access Cost Detail (Alternatives 1, 2, 8, and 9)

Improvement	Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
	(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
Bus Plaza / Kiss-n-Fly drop-off	$ 8,700,000	$ 1,305,000	$ 2,701,350	$ 12,706,350	This estimate is based upon Program-Level information and broad planning guidelines. The Bus Plaza consists of an open bus-drop-off area. The project includes feature concrete bollards and architectural enhancements; curbs and gutters on both sides of the bus lanes and road markings; natural and colored concrete sidewalks; high-quality and energy efficient lighting; and an allowance for benches, trash recepticles and planters. The pedestrian plaza features colored concrete, landscaping, lighting and an allowance for benches, trash receptices and planters.
Pedestrian Plaza	$ 5,900,000	$ 885,000	$ 1,831,950	$ 8,616,950	This estimate is based upon Program-Level information and broad planning guidelines. The Pedestrian Plaza knits the Bus Plaza and Kiss-n-Fly drop-off area with the Passengers Service Area. The pedestrian plaza features colored concrete, landscaping, lighting and an allowance for benches, trash receptices and planters.
Subtotal	**$ 37,900,000**	**$ 5,685,000**	**$ 11,767,950**	**$ 55,352,950**	
Parking Structure					
Foundations	$ 10,332,000	$ 1,549,800	$ 3,208,086	$ 15,089,886	This estimate is based upon Program-Level information and broad planning guidelines. The structural system includes spread footing foundations, interior ramps and two 2-lane one-way circulation ramps.
Superstructure	$ 34,513,200	$ 5,176,980	$ 10,716,349	$ 50,406,529	This estimate is based upon Program-Level information and broad planning guidelines. Constructs a multi-level pre-cast superstructure consisting of roughly 1,440,000 square feet of garage area housing a total of 4,000 parking spaces; and includes perimeter walls on the top-most level and code-mandated fire exits. The second level of this garage houses the Passenger Service Area (CSA).
Exterior Closure	$ 10,404,000	$ 1,560,600	$ 3,230,442	$ 15,195,042	This estimate is based upon Program-Level information and broad planning guidelines. The top-level has a standing seam flat metal panel roof canopy covering about 80% of the floor area. There is also an exterior architectural screen or similar façade allowing natural ventilation .
Interior	$ 6,100,000	$ 915,000	$ 1,894,050	$ 8,909,050	This estimate is based upon Program-Level information and broad planning guidelines. This includes the signage, painting, lighting and drainage, and special systems such as CCTV.
Cast-in-Place construction premium	$ 15,347,000	$ 2,302,050	$ 4,765,244	$ 22,414,294	This estimate is based upon Program-Level information and broad planning guidelines. A pre-cast construction technique is described above. This line item is a premium cost if the cast-in-place approach is selected.
Double Helix Ramp Premium	$ 12,277,600	$ 1,841,640	$ 3,812,195	$ 17,931,435	This estimate is based upon Program-Level information and broad planning guidelines. Interior ramps are used for vehicle circulation in the above garage. This line item is a premium if double-helix ramps are employed.
Parking Revenue Control System	$ 3,800,000	$ 570,000	$ 1,179,900	$ 5,549,900	This estimate is based upon Program-Level information and broad planning guidelines. This state of the art revenue collection system includes license plate recognition capability; automatic garage routing and parking availability indicators; credit card "swipe-at-entry" and traditional "cash-at-booth" payment plans.
Subtotal	**$ 92,773,800**	**$ 13,916,070**	**$ 28,806,265**	**$ 135,496,135**	

Table GA-2
Ground Access Cost Detail (Alternatives 1, 2, 8, and 9)

Improvement	Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
	(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
Other Costs					
Access / Egress roadway modifications	$ 2,500,000	$ 375,000	$ 776,250	$ 3,651,250	The specific access/egress have yet to be determined, but there would likely be driveways on 96th street, 98th street and Airport Boulevard. Separate driveways for private vehicles and commercial vehicles would be provided.
Commercial Lot / Surface Parking	$ 1,500,000	$ 225,000	$ 465,750	$ 2,190,750	There is envisioned to be some commercial lot / surface parking on the site. This allowance prices a 125,000 sq. ft. (approximately 400-spaces) of surface parking and includes striping, a traffic control guard shack, and lighting; sidewalk modification, perimeter fence enhancement, etc.
Landscape Allowance	$ 528,000	$ 79,200	$ 163,944	$ 771,144	An allowance to provide 53,000 sq. ft. (assuming 10-foot landscape/buffer for 5,280 linear feet). Assumes light landscaping.
Budget Relocation	$0	$0	$0	$0	At this time, there is no budgetary provision for relocating Budget.
Subtotal	**$ 4,528,000**	**$ 679,200**	**$ 1,405,944**	**$ 6,613,144**	
Facility Total	**$ 142,501,800**	**$ 21,375,270**	**$ 44,246,809**	**$ 208,123,879**	
Facility Total: Rounded	**$ 143,000,000**	**$ 21,000,000**	**$ 44,000,000**	**$ 208,000,000**	
Parking Lot C					
Access / Egress roadway modifications	0	0	0	0	As of this estimate date, there are no anticipated impacts to this facility and its operation as a parking lot.
Landscape Allowance	0	0	0	0	As of this estimate date, there are no anticipated impacts to this facility and its operation as a parking lot.
Parking Revenue Control System	0	0	0	0	As of this estimate date, there are no anticipated impacts to this facility and its operation as a parking lot.
Miscellaneous site modifications, utility relocations, etc.	0	0	0	0	As of this estimate date, there are no anticipated impacts to this facility and its operation as a parking lot.
Subtotal	**$ -**	**$ -**	**$ -**	**$ -**	
Facility Total: Rounded	**$ -**	**$ -**	**$ -**	**$ -**	
Busway					
Manchester Square Site - ramp from at-grade to busway elevation over Aviation	$ 4,000,000	$ 600,000	$ 1,242,000	$ 5,842,000	Constructs 500 lf. of ramped guideway starting with at-grade elevation in the Manchester Square and ramping to busway grade over Aviation Blvd. The exact alignment is not yet determined; though it is likely that raised median islands would be constructed to house the support columns for the elevated busway. The cross section of the busway is 36-feet wide; and provides one-lane of traffic each way, with shoulders to accommodate vehicle breakdowns.

Table GA-2
Ground Access Cost Detail (Alternatives 1, 2, 8, and 9)

Improvement	Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
	(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
Aviation Blvd. to Transportation Facility entrance - Elevated	$ 20,400,000	$ 3,060,000	$ 6,334,200	$ 29,794,200	Constructs 2,400 lf. of elevated guideway in the 98th St. alignment between Aviation Blvd. and the entrance of the 98th St. Transportation Facility. The exact alignment is not yet determined; though it is likely that raised median islands would be constructed within the 98th St. right-of-way to house the support columns for the elevated busway. The cross section of the busway is 36-feet wide; and provides one-lane of traffic each way, with shoulders to accommodate vehicle breakdowns.
98th St. Transportation Facility - Elevated	$0	$0	$0	$0	The 1,200 lf. of busway inside the 98th St. Transportation Facility is included in that estimate.
98th St. Transportation Facility - Ramp to Ground Level	$0	$0	$0	$0	This 400 lf. of busway inside the 98th St. Transportation Facility is included in that estimate.
98th St. Transportation Facility to (realigned) Sky Way crossing - Elevated	$ 6,800,000	$ 1,020,000	$ 2,111,400	$ 9,931,400	Constructs 1,600-lf. of elevated guideway from the 98th St. Transportation Facility, the aerial busway will continue along the 98th St. corridor, crossing over Sepulveda Blvd. into the current Park One property. The busway will cross over the relocated Sky Way so it will be on the terminal side upon entering the CTA. The exact alignment is not yet determined; though it is likely that raised median islands would be constructed within the 98th St. right-of-way to house the support columns for the elevated busway. The cross section of the busway is 18-feet wide; and provides one-lane of traffic, with shoulders to accommodate vehicle breakdowns.
Sky Way crossing to CTA Second Level Roadway - Elevated	$ 3,400,000	$ 510,000	$ 1,055,700	$ 4,965,700	Constructs 800-lf. of elevated guideway from the Sky Way crossing into the Second-level Roadway for CTA access. Once the busway enters the CTA, it will be required to use Mixed flow lanes on the upper level roadway. The exact alignment is not yet determined; though it is likely that raised median islands would be constructed along the right-of-way to house the support columns for the elevated busway. The cross section of the busway is 18-feet wide; and provides one-lane of traffic, with shoulders to accommodate vehicle breakdowns.
Build Busway capable of supporting APM System	$ 22,200,000	$ 3,330,000	$ 6,893,100	$ 32,423,100	The busway is purposefully sized to accommodate an APM.
Subtotal	**$ 56,800,000**	**$ 8,520,000**	**$ 17,636,400**	**$ 82,956,400**	
Facility Total: Rounded	**$ 57,000,000**	**$ 9,000,000**	**$ 18,000,000**	**$ 84,000,000**	
Busway Stations					
Manchester Square					
Manchester Square - elevated Platform #1	$ 9,800,000	$ 1,470,000	$ 3,042,900	$ 14,312,900	Constructs elevated, open-air, concrete-deck platform. This minimalist platform includes a non-architectural metal canopy roof covering a portion of the platform. Includes a stairwell flanked by two escalators for vertical circulation.
Manchester Square - elevated Platform #2	$0	$0	$0	$0	Concept Alts 1,2 does not include a second busway station at Manchester Square (as of 24-Oct-2011).
98th Street Transportation Facility	$0	$0	$0	$0	The platform is estimated as part of the 98th St. Transportation Facility.

Table GA-2
Ground Access Cost Detail (Alternatives 1, 2, 8, and 9)

Improvement	Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
	(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
CTA Stations	$0	$0	$0	$0	There is no bus stop required in the CTA. Shuttle buses will use existing curbs for passenger drop-off and pick-up.
Subtotal	**$ 9,800,000**	**$ 1,470,000**	**$ 3,042,900**	**$ 14,312,900**	
Facility Total: Rounded	**$ 10,000,000**	**$ 1,000,000**	**$ 3,000,000**	**$ 14,000,000**	
Manchester Square Parking (Alternatives 1,2)					
Site Preparation / Utilities	$ 50,000,000	$ 7,500,000	$ 15,525,000	$ 73,025,000	Demolish existing hardscape and landscape (100-acres). Demolish and relocate utilities including the above ground electrical lines, demolish existing curbs and gutters, etc.
Surface Parking	$ 12,150,000	$ 1,822,500	$ 3,772,575	$ 17,745,075	Construct surface parking for 90-acres of the site for 4,200 public spaces and 3,500 employee spaces totaling 7,700 spaces. This includes thicker pavement for designated shuttle bus routes, some sidewalk, curb and gutter construction around the bus platforms, site lighting, an allowance for wheel stops, and all striping and signage.
Parking Revenue Control System	$ 3,990,000	$ 598,500	$ 1,238,895	$ 5,827,395	This state of the art revenue collection system includes license plate recognition capability; automatic garage routing and parking availability indicators; credit card "swipe-at-entry" and traditional "cash-at-booth" payment plans. It is activated for the 4,200 public spaces.
Miscellaneous site modifications, utility relocations, etc.	$ 2,500,000	$ 375,000	$ 776,250	$ 3,651,250	This allowance provides for minor revisions to the site that may be required resulting from the bus platforms and/or site entry or egress modifications.
Landscape Allowance - Manchester Square site.	$ 2,376,000	$ 356,400	$ 737,748	$ 3,470,148	An allowance to provide 158,400 sq. ft. (assuming 20-foot landscape/buffer for approximately 7,900 linear feet). Assumes a mix of heavy and light landscaping.
Subtotal	**$ 71,016,000**	**$ 10,652,400**	**$ 22,050,468**	**$ 103,718,868**	
Facility Total: Rounded	**$ 71,000,000**	**$ 11,000,000**	**$ 22,000,000**	**$ 104,000,000**	
Manchester Square - Site Prep and Public Parking (Alternatives 8, 9)					
Site Preparation / Utilities	$ 50,000,000	$ 7,500,000	$ 15,525,000	$ 73,025,000	Demolish existing hardscape and landscape (100-acres). Demolish and relocate utilities including the above ground electrical lines, demolish existing curbs and gutters, etc.
Surface Parking	$ 4,050,000	$ 607,500	$ 1,257,525	$ 5,915,025	Construct surface parking for 30-acres of the site for 4,200 public spaces. This includes thicker pavement for designated shuttle bus routes, some sidewalk, curb and gutter construction around the bus platforms, site lighting, an allowance for wheel stops, and all striping and signage. It is not yet determined whether the site is adequately sized to construct this number of surface parking positions; or whether a structured garage will be required.
Parking Revenue Control System	$ 3,990,000	$ 598,500	$ 1,238,895	$ 5,827,395	This state of the art revenue collection system includes license plate recognition capability; automatic garage routing and parking availability indicators; credit card "swipe-at-entry" and traditional "cash-at-booth" payment plans. It is activated for the 4,200 public spaces.
Miscellaneous site modifications, utility relocations, etc.	$ 2,500,000	$ 375,000	$ 776,250	$ 3,651,250	This allowance provides for minor revisions to the site that may be required resulting from the bus platforms and/or site entry or egress modifications.
Landscape Allowance - Manchester Square site.	$ 2,376,000	$ 356,400	$ 737,748	$ 3,470,148	An allowance to provide 158,400 sq. ft. (assuming 20-foot landscape/buffer for approximately 7,900 linear feet). Assumes a mix of heavy and light landscaping.
Subtotal	**$ 62,916,000**	**$ 9,437,400**	**$ 19,535,418**	**$ 91,888,818**	

Table GA-2
Ground Access Cost Detail (Alternatives 1, 2, 8, and 9)

Improvement	Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
	(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
Facility Total: Rounded	**$ 63,000,000**	**$ 9,000,000**	**$ 20,000,000**	**$ 92,000,000**	
Busway					
Manchester Square Site - elevated guideway	$ 14,000,000	$ 2,100,000	$ 4,347,000	$ 20,447,000	Constructs 1,500 lf. of elevated guideway on Manchester Square site to Aviation Boulevard. The exact alignment is not yet determined; though it is likely that raised median islands would be constructed to house the support columns for the elevated busway. The cross section of the busway is 36-feet wide; and provides one-lane of traffic each way, with shoulders to accommodate vehicle breakdowns.
Subtotal	**$ 14,000,000**	**$ 2,100,000**	**$ 4,347,000**	**$ 20,447,000**	
Facility Total: Rounded	**$ 14,000,000**	**$ 2,000,000**	**$ 4,000,000**	**$ 20,000,000**	
Manchester Square - CONRAC and Service Site Parking					
Service Center Site Facilities	$ 6,075,000	$ 911,250	$ 1,886,288	$ 8,872,538	Construct surface parking for 45acres of the site for 4,200 public spaces. This includes thicker pavement for designated shuttle bus routes, some sidewalk, curb and gutter construction around the bus platforms, site lighting, an allowance for wheel stops, and all striping and signage.
Subtotal	**$ 6,075,000**	**$ 911,250**	**$ 1,886,288**	**$ 8,872,538**	
Customer Service Area / Pedestrian Plaza					
Customer Service Area	$ 45,042,360	$ 6,756,354	$ 13,985,653	$ 65,784,366	Constructs the Customer Service Area (CSA) on the 4th level of the Ready/Return Garage. The enclosed CSA is about 85,000 sq. ft. ; and provides 262 rental positions with 40-foot queuing, a large lobby, restrooms, etc. Includes customer circulation. Finishes are "terminal quality;" and FIDS and CCTV systems are included. Also included is 85,000 sq. ft. of solid canopy curved-roofing over the CSA area with necessary supporting infrastructure.
Bus Plaza / Customer Drop-off	$ 8,700,000	$ 1,305,000	$ 2,701,350	$ 12,706,350	The Bus Plaza consists of an open bus-drop-off area. The project includes feature concrete bollards and architectural enhancements; curbs and gutters on both sides of the bus lanes and road markings; natural and colored concrete sidewalks; high-quality and energy efficient lighting; and an allowance for benches, trash recepticles and planters. The pedestrian plaza features colored concrete,
Pedestrian Plaza	$ 5,900,000	$ 885,000	$ 1,831,950	$ 8,616,950	The Pedestrian Plaza knits the Bus Plaza and Customer Drop-off area with the ConRAC Customer Service Area. The pedestrian plaza features colored concrete, landscaping, lighting and an allowance for benches, trash receptices and planters.
Subtotal	**$ 59,642,360**	**$ 8,946,354**	**$ 18,518,953**	**$ 87,107,666**	
Ready Return Parking Structure					
Foundations	$ 13,969,725	$ 2,095,459	$ 4,337,600	$ 20,402,783	The structural system includes spread footing foundations, interior ramps and two 2-lane one-way circulation ramps.
Superstructure	$ 46,664,723	$ 6,999,708	$ 14,489,396	$ 68,153,827	Constructs a four-level cast-in-place superstructure consisting of 1,947,000 square feet of garage area housing a total of 5,249 parking spaces; and includes perimeter walls at Level 4 and code-mandated fire exits. The second level of this garage houses the Customer Service Area (CSA).

Table GA-2
Ground Access Cost Detail (Alternatives 1, 2, 8, and 9)

Improvement	Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
	(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
Exterior Closure	$ 14,067,075	$ 2,110,061	$ 4,367,827	$ 20,544,963	Level 4 has a roof canopy approximately 419,000 sq. ft. There is also an exterior architectural screen or similar façade allowing natural ventilation .
Interior	$ 8,247,708	$ 1,237,156	$ 2,560,913	$ 12,045,778	This includes the signage, painting, lighting and drainage, and special systems such as CCTV.
Cast-in-Place construction premium	$ 20,750,423	$ 3,112,563	$ 6,443,006	$ 30,305,993	A pre-cast construction technique is described above. This line item is a premium cost if the cast-in-place approach is selected.
Double Helix Ramp Premium	$ 12,277,600	$ 1,841,640	$ 3,812,195	$ 17,931,435	Interior ramps are used for vehicle circulation in the above garage. This line item is a premium if double-helix ramps are employed.
Rental Car Storage Parking	$ 20,520,000	$ 3,078,000	$ 6,371,460	$ 30,000,000	This provides rental car storage parking.
Subtotal	**$ 136,497,254**	**$ 20,474,588**	**$ 42,382,397**	**$ 199,384,779**	
Quick Turn-around Facility					
Vehicle Service (Fueling / Vacuuming)	$ 8,300,000	$ 1,245,000	$ 2,577,150	$ 12,122,150	The fueling and vacuum island provide fuel nozzles and vacuum hoses. The fuel queuing area is 165,000 sq. ft. and the fuel/vacuum islands occupy 110,000 sq. ft.
Fuel Storage / Dispensing Area.	$ 4,700,000	$ 705,000	$ 1,459,350	$ 6,864,350	Installs ten (10) 20-gallon underground fuel tanks with networked fuel management system, pumps, leak detectors at a facility on the site. The facility includes a fuel delivery area and a fuel tunnel to the Quick Turnaround Area (QTA).
Washing and Maintenance Bays	$ 15,480,000	$ 2,322,000	$ 4,806,540	$ 22,608,540	Constructs wash and maintenance bays.
Equipment Allowance	$ 17,800,000	$ 2,670,000	$ 5,526,900	$ 25,996,900	Car wash equipment, car fueling and processing equipment and fuel distribution cost.
Build three-story QTA Garage	$ 35,389,831	$ 5,308,475	$ 10,988,542	$ 51,686,847	Construct a three-story QTA facility of 594,000 sq. ft. that provides vehicle queuing, fueling and vacuuming islands, wash and maintenance bays.
Subtotal	**$ 81,669,831**	**$ 12,250,475**	**$ 25,358,482**	**$ 119,278,787**	
Subtotal	**$ 283,884,444**	**$ 42,582,667**	**$ 88,146,120**	**$ 414,643,770**	
Facility Total: Rounded	**$ 284,000,000**	**$ 43,000,000**	**$ 88,000,000**	**$ 415,000,000**	
APM Guideway Structure - Fixed Facility					
Demolish busway from Sepulveda Blvd. to CTA	$ 2,550,000	$ 382,500	$ 791,775	$ 3,724,275	Demolishes some 1,200 lf. of busway for revised APM alignment.
98th St. Transportation Facility to (realigned) Sky Way - Elevated	$ 13,720,000	$2,058,000	$4,260,060	$20,038,060	Constructs 1,400-lf. of elevated APM guideway from the 98th St. Transportation Facility, crossing over Sepulveda Blvd. into the current Park One property. The APM guideway will not cross over the relocated Sky Way so it will be on the garage side upon entering the CTA. The exact alignment is not yet determined; though it is likely that raised median islands would be constructed within the 98th St. right-of-way to house the support columns for the elevated APM guideway. The cross section of the APM guideway 30-feet wide; and provides one-lane of traffic each way, with shoulders to accommodate vehicle breakdowns.
Sky Way to CTA - Elevated	$ 7,840,000	$ 1,176,000	$ 2,434,320	$ 11,450,320	Constructs 800-lf. of elevated APM guideway from the Sky Way into the CTA. The exact alignment is not yet determined; though it is likely that raised median islands would be constructed along the right-of-way to house the support columns for the elevated APM guideway. The cross section of the APM guideway is 30-feet wide; and provides one-lane of traffic each way, with shoulders to accommodate vehicle breakdowns.

Table GA-2
Ground Access Cost Detail (Alternatives 1, 2, 8, and 9)

Improvement	Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
	(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
CTA "Pinched Loop" Configuration	$ 55,890,000	$ 8,383,500	$ 17,353,845	$ 81,627,345	Constructs 4,400 lf. of elevated APM guideway within the CTA. Within the CTA, the APM would be located above the upper level roadway and, for the most part, follow the alignment of World Way, with the exception that it would use the realigned West Way corridor to transition from the north to the south side of the CTA. Pedestrian bridges over the upper level roadway would connect passengers to the terminals. This is a more complex and costly guideway to build. If a lower platform height is selected, e.g. beneath the pedestrian bridges, the cost savings identified in the Premium below may be realized.
Subtotal	**$ 80,000,000**	**$ 11,617,500**	**$ 24,048,225**	**$ 113,115,725**	
Facility Total: Rounded	**$ 80,000,000**	**$ 12,000,000**	**$ 24,000,000**	**$ 116,000,000**	
CTA Parking Garage Demo/Rebuild for APM - Fixed Facility					
Demolish Garages #2a and 7	$ 25,000,000	$ 3,750,000	$ 7,762,500	$ 36,512,500	The APM Guideway and Station alignment currently impact the garages. This project demolishes the entire garage as it is unclear how the structural integrity of a partial garage would be maintained.
Rebuild Garages #2a and 7	$ 50,000,000	$7,500,000	$15,525,000	$73,025,000	Rebuilds roughly 2,500 structured spaces in the available space.
Subtotal	**$ 75,000,000**	**$ 11,250,000**	**$ 23,287,500**	**$ 109,537,500**	
Facility Total: Rounded	**$ 75,000,000**	**$ 11,000,000**	**$ 23,000,000**	**$ 109,000,000**	
APM Stations - Fixed Facility					
Manchester Square					
Manchester Square - Platform #1	$0	$0	$0	$0	The platform is estimated as part of the Busway cost.
Manchester Square - Platform #2	$ 9,800,000	$ 1,470,000	$ 3,042,900	$ 14,312,900	Constructs elevated, open-air, concrete-deck platform. This minimalist platform includes a non-architectural metal canopy roof covering a portion of the platform. The platform includes a stairway, two escalators and an elevator for vertical circulation.
98th Street Transportation Facility	$0	$0	$0	$0	The platform is estimated as part of the 98th St. Transportation Facility.
CTA Station #1	$17,210,000	$2,581,500	$5,343,705	$25,135,205	Constructs an elevated, open-air, concrete-deck platform. This minimalist platform includes a non-architectural metal canopy roof covering a portion of the platform. The platform includes a stairway, two escalators and an elevator for vertical circulation. This platform includes two 25-foot by 200-foot concrete deck passenger walkway to the terminal. Depending upon the location of the station and the passenger walkway connection to the terminal, the Terminal Modification Premium may be triggered.
CTA Station #2	$17,210,000	$2,581,500	$5,343,705	$25,135,205	Constructs an elevated, open-air, concrete-deck platform. This minimalist platform includes a non-architectural metal canopy roof covering a portion of the platform. The platform includes a stairway, two escalators and an elevator for vertical circulation. This platform includes two 25-foot by 200-foot concrete deck passenger walkway to the terminal. Depending upon the location of the station and the passenger walkway connection to the terminal, the Terminal Modification Premium may be triggered.

Table GA-2
Ground Access Cost Detail (Alternatives 1, 2, 8, and 9)

Improvement	Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
	(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
CTA Station #3	$17,210,000	$2,581,500	$5,343,705	$25,135,205	Constructs an elevated, open-air, concrete-deck platform. This minimalist platform includes a non-architectural metal canopy roof covering a portion of the platform. The platform includes a stairway, two escalators and an elevator for vertical circulation. This platform includes two 25-foot by 200-foot concrete deck passenger walkway to the terminal. Depending upon the location of the station and the passenger walkway connection to the terminal, the Terminal Modification Premium may be triggered.
CTA Station #4	$17,210,000	$2,581,500	$5,343,705	$25,135,205	Constructs an elevated, open-air, concrete-deck platform. This minimalist platform includes a non-architectural metal canopy roof covering a portion of the platform. The platform includes a stairway, two escalators and an elevator for vertical circulation. This platform includes two 25-foot by 200-foot concrete deck passenger walkway to the terminal. Depending upon the location of the station and the passenger walkway connection to the terminal, the Terminal Modification Premium may be triggered.
Subtotal	**$ 78,640,000**	**$ 11,796,000**	**$ 24,417,720**	**$ 114,853,720**	
Facility Total: Rounded	**$ 79,000,000**	**$ 12,000,000**	**$ 24,000,000**	**$ 115,000,000**	
APM Maintenance Facility - Manchester Square (Alternative 9)					
Manchester Square					
Access Guideway	$ 17,400,000	$ 2,610,000	$ 5,402,700	$ 25,412,700	Provides 6,000 lf. of guideway for the maintenance facility.
Maintenance Facility Building - Shell and rough-in	$ 15,180,000	$ 2,277,000	$ 4,713,390	$ 22,170,390	The APM is expected to require a maintenance facility with an access guideway of approximately 6,000 lf. The maintenance facility is approximately 92,000 sq. ft. (2.1 acres) and is located in Manchester Sq.
Maintenance Facility Building - Finish	$ 8,400,000	$ 1,260,000	$ 2,608,200	$ 12,268,200	An allowance to finish out the interior space by: building out the office space; partitioning out the light maintenance area, heavy maintenance area, car wash area, and open area; partitioning out the mechanical shop, the electrical shop, etc.
Power Distribution Substation - Building only	$ 2,500,000	$ 375,000	$ 776,250	$ 3,651,250	Constructs five (5) Power Distribution Substation buildings along the route to provide power to the APM guideway. Each building is assumed to be 3,000 sq. ft. An approach is to get two within Manchester Sq., one within the Transportation Facility, and the final two within the CTA. This does not include the Power Distribution Equipment.
Maintenance Tools / Equipment	$0	$0	$0	$0	The maintenance tools and equipment, such as wash racks, etc. is not included in the facility cost.
Subtotal	**$ 43,480,000**	**$ 6,522,000**	**$ 13,500,540**	**$ 63,502,540**	
Facility Total: Rounded	**$ 43,000,000**	**$ 7,000,000**	**$ 14,000,000**	**$ 64,000,000**	
Additional Employee Parking - "Avis Lot"					
"Avis Lot"					
Site Preparation / Utilities	$ 22,500,000	$ 3,375,000	$ 6,986,250	$ 32,861,250	Demolish existing low-rise structures; and demolish existing hardscape and landscape (32-acres). Demolish and relocate utilities including the above ground electrical lines, demolish existing curbs and gutters, etc.

Table GA-2
Ground Access Cost Detail (Alternatives 1, 2, 8, and 9)

Improvement	Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
	(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
Surface Parking	$ 4,320,000	$ 648,000	$ 1,341,360	$ 6,309,360	Construct surface parking for 30-acres of the site for 4,200 public spaces. This includes thicker pavement for designated shuttle bus routes, some sidewalk, curb and gutter construction around the bus platforms, site lighting, an allowance for wheel stops, and all striping and signage.
Miscellaneous site modifications, utility relocations, etc.	$ 2,500,000	$ 375,000	$ 776,250	$ 3,651,250	This allowance provides for minor revisions to the site that may be required resulting from the bus platforms and/or site entry or egress modifications.
Landscape Allowance - "Avis Lot"	$ 528,000	$ 79,200	$ 163,944	$ 771,144	An allowance to provide 26,200 sq. ft. (assuming 10-foot landscape/buffer for approximately 2,620 linear feet). Assumes a mix of heavy and light landscaping.
Avis Relocation	$0	$0	$0	$0	At this time, there is no budgetary provision for relocating Avis.
Subtotal	**$ 29,848,000**	**$ 4,477,200**	**$ 9,267,804**	**$ 43,593,004**	
Facility Total: Rounded	**$ 30,000,000**	**$ 4,000,000**	**$ 9,000,000**	**$ 43,000,000**	
APM Operational System Cost Estimate (Alternative 9)					
Forecast Operational System Cost	$325,000,000	$0	$0	$325,000,000	This estimate is based upon Program-Level information and broad planning guidelines.
Subtotal	$325,000,000	$0	$0	$325,000,000	
Facility Total: Rounded	**$325,000,000**	**$0**	**$0**	**$325,000,000**	

Source: Los Angeles World Airports and AECOM, 2011.

Table GA-3
Ground Access Cost Summary (Alternative 3)

	Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost
	(A)	B=(Cont.%) x (A)	C=(27%) x (A + B)	D=(A+B+C)
CONRAC (Lot C) - See Table GA-4 for details	$ 487,000,000	$ 73,000,000	$ 151,000,000	$ 711,000,000
Ground Transportation Center (Manchester Sq.) - See Table GA-5 for details	$ 1,894,000,000	$ 284,000,000	$ 588,000,000	$ 2,766,000,000
Intermodal Transit Center (Continental City) (includes Pedestrian Bridge and Landside APM Maintenance Facility) - See Table GA-6 for details	$ 349,000,000	$ 52,000,000	$ 108,000,000	$ 509,000,000
APM Infrastructure - See Table GA-7 for details	$ 636,633,336	$ 95,495,000	$ 257,000,000	$ 929,802,988
APM Cars and Equipment - See Table GA-7 for details	$ 197,674,651	$ 92,340,000	$ 191,143,800	$ 900,000,000
Access Roadways (includes I-405 and I-105 improvements) - See Table GA-8 for details	$ 354,000,000	$ 53,000,000	$ 110,000,000	$ 517,000,000
West Employee Parking Lot - See Table GA-9 for details	$ 336,000,000	$ 50,000,000	$ 104,000,000	$ 490,000,000

Source: Los Angeles World Airports and AECOM, 2011.

Table GA-4
Ground Access Improvements - Alternative 3 Consolidated Rental Car (CONRAC) Facility

As of: 16-Sep-2011

Line		Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
		(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
	Site Preparation					
1	Site Preparation / Utilities	$ 151,300,000	$ 22,695,000	$ 46,978,650	$ 220,973,650	Demolish the existing Budget and Avis Facilities (approx. 100,000 sq. ft. combined); Demolish existing hardscape and landscape (159-acres). Demolish and relocate utilities including the above ground electrical lines, the gas line near 96th Street, protecting the sewer outfall(s), and implementing the necessary storm water drainage modifications.
	Subtotal	**$ 151,300,000**	**$ 22,695,000**	**$ 46,978,650**	**$ 220,973,650**	
	Customer Service Area (CSA)					
2	Customer Service Area	$ 24,600,000	$ 3,690,000	$ 7,638,300	$ 35,928,300	Constructs the Customer Service Area (CSA) on the 2nd level of the Ready/Return Garage. The CSA is 89,000 sq. ft. (approximately 240-feet by 420-feet); and provides 100 service counters with 40-foot queuing, a large lobby, restrooms, etc. Customer circulation is accomplished by providing six (6) escalators, eight (8) elevators and a central staircase. Finishes are "terminal quality;" and FIDS and CCTV systems are included.
	Subtotal	**$ 24,600,000**	**$ 3,690,000**	**$ 7,638,300**	**$ 35,928,300**	
	Bus and Pedestrian Plaza					
3	Bus Plaza / Customer Drop-off	$ 5,900,000	$ 885,000	$ 1,831,950	$ 8,616,950	The Bus Plaza consists of an open bus-drop-off area (82,300 sq. ft.) concrete, paved area. The project includes feature concrete bollards and architectural enhancements; curbs and gutters on both sides of the bus lanes and road markings; natural and colored concrete sidewalks; high-quality and energy efficient lighting; and an allowance for benches, trash recepticles and planters.
4	Pedestrian Plaza	$ 8,700,000	$ 1,305,000	$ 2,701,350	$ 12,706,350	The Pedestrian Plaza is approximately 1,400-feet by 70-feet (98,000 sq. ft.) between the Ready/Return Garage and Airport Boulevard. The project includes feature pedestrian colored concrete, landscaping, lighting and an allowance for benches, trash recepticles and planters.
	Subtotal	**$ 14,600,000**	**$ 2,190,000**	**$ 4,533,300**	**$ 21,323,300**	
	Ready Return Parking Structure					
5	Foundations	$ 20,664,000	$ 3,099,600	$ 6,416,172	$ 30,179,772	The structural system includes spread footing foundations, interior ramps and two 2-lane one-way circulation ramps.
6	Superstructure	$ 69,026,400	$ 10,353,960	$ 21,432,697	$ 100,813,057	Constructs a four-level cast-in-place superstructure consisting of 2,880,000 square feet of garage area housing a total of 8,000 parking spaces; and includes perimeter walls at Level 4 and code-mandated fire exits. The second level of this garage houses the Customer Service Area (CSA).
7	Exterior Closure	$ 20,808,000	$ 3,121,200	$ 6,460,884	$ 30,390,084	Level 4 has a standing seam flat metal panel roof canopy approximately 576,000 sq. ft. covering about 80% of the floor area. There is also a 40-foot high exterior architecutral screen or similar façade allowing natural ventilation .
8	Interior	$ 19,800,000	$ 2,970,000	$ 6,147,900	$ 28,917,900	This includes the signage, painting, lighting and drainage, and special systems such as CCTV.

Table GA-4
Ground Access Improvements - Alternative 3 Consolidated Rental Car (CONRAC) Facility

As of: 16-Sep-2011

Line		Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
		(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
8a	Cast-in-Place construction premium	$ 30,694,000	$ 4,604,100	$ 9,530,487	$ 44,828,587	A pre-cast construction technique is described above. This line item is a premium cost if the cast-in-place approach is selected.
8b	Double Helix Ramp Premium	$ 12,277,600	$ 1,841,640	$ 3,812,195	$ 17,931,435	Interior ramps are used for vehicle circulation in the above garage. This line item is a premium if double-helix ramps are employed.
8c						
	Subtotal	**$ 173,270,000**	**$ 25,990,500**	**$ 53,800,335**	**$ 253,060,835**	
	Quick Turn Around Facility					
9	Vehicle Queuing	$ 6,500,000	$ 975,000	$ 2,018,250	$ 9,493,250	The vehicle queuing area is approximately 1,700-feet by 250-feet (425,000 sq. ft.) and includes concrete paving, curbds, road markings, lighting, drainage and signage.
10	Vehicle Service (Fueling / Vacuuming)	$ 8,300,000	$ 1,245,000	$ 2,577,150	$ 12,122,150	The fueling and vacuum island provide fuel nozzles and vacuum hoses. The fuel queuing area is 165,000 sq. ft. and the fuel/vacuum islands occupy 110,000 sq. ft.
11	Underground Fuel Storage / Dispensing Area.	$ 4,700,000	$ 705,000	$ 1,459,350	$ 6,864,350	Installs ten (10) 20-gallon underground fuel tanks with networked fuel management system, pumps, leak detectors at a facility along Westchester Parkway. The facility includes a fuel delivery area and a fuel tunnel to the Quick Turnaround Area (QTA).
11	Washing and Maintenance Bays	$ 15,480,000	$ 2,322,000	$ 4,806,540	$ 22,608,540	Constructs concrete masonry wash and maintenance buildings totaling 96,000 sq. ft. (80-bays at 20-feet by 60-feet each).
	Subtotal	**$ 34,980,000**	**$ 5,247,000**	**$ 10,861,290**	**$ 51,088,290**	
	Road and Intersection Improvement					
12	Road and Intersection Improvement	$ 19,400,000	$ 2,910,000	$ 6,023,700	$ 28,333,700	This roadway revision includes: Jenny Avenue will be replaced with a new 4-lane road (Rental Car Drive) ramped to meet grade requirements; the traffic signals at Jenny Avenue and Westchester Parkway and at Rental Car Drive and 98th Street will be replaced; mitigation of four (4) MMRP intersections; and builds a two-lane open-cut culvert-box tunnel under Westchester Parkway to the North Overflow Parking Area.
	Subtotal	**$ 19,400,000**	**$ 2,910,000**	**$ 6,023,700**	**$ 28,333,700**	
	RAC Surface Overflow Parking Area					
13	RAC Surface Overflow Parking Area	$ 30,100,000	$ 4,515,000	$ 9,346,050	$ 43,961,050	Constructs an overflow parking area of roughly 89.5 acres, and includes: paving, curb and gutter, road markings; a 6-foot high wall to match the other perimeter walls; a high-quality and energy efficient sight lighting; and security systems.
	Subtotal	**$ 30,100,000**	**$ 4,515,000**	**$ 9,346,050**	**$ 43,961,050**	

Table GA-4
Ground Access Improvements - Alternative 3 Consolidated Rental Car (CONRAC) Facility

As of: 16-Sep-2011

Line		Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
		(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
	Other Costs					
14	Landscape Allowance	$ 11,000,000	$ 1,650,000	$ 3,415,500	$ 16,065,500	Provides landscaping for roughly 105,000 sq. ft. and assumes 51,000 sq. ft. of existing landscape and wall along Sepulveda Boulevard and #Westchester Parkway for existing Lot C remains. This landscaping budget provides a 20-foot wide by 5,240-foot long from the intersection of 96h street and Sepulveda south to 98th and east to Airport to the intersection with Westchester. There is an allowance for heavy landscaping in front of the Bus Plaza.
15	Budget and Avis Relocation	$ 27,600,000	$ 4,140,000	$ 8,569,800	$ 40,309,800	Construct temporary facilities in kind for Avis and budget operations on the 37.2 acre site north of Westchester Parkway prior to demolition of their existing facilities. This cost includes traffic control modifications, ramp work, and construction phasing requirements.
	Subtotal	**$ 38,600,000**	**$ 5,790,000**	**$ 11,985,300**	**$ 56,375,300**	
	Report Total	**$ 486,850,000**	**$ 73,027,500**	**$ 151,166,925**	**$ 711,044,425**	

Notes:

1) This estimate is based upon LAX Advanced Planning ConRAC Project Definition Report dated November 30, 2006; and all costs are in 2011-dollars.
2) This estimate does not include the cost of environmental mitigation and/or soil remediation; or the potential land acquisition and/or business relocation costs, other than Budget and Avis.
4) It is anticipated that the tenant(s) will provide their improvements; and equip the wash and maintenance bays, provide specialty signage, etc.
5) The APM1 Station is included in the APM1 Estimate.
6) Line 12. The MMRP Intersections are: Airport & Arbor Vitae; Century and Sepulveda; La Tijera and Machester; and Sepulveda and La Tijera.
7) Line 12. Does not include the cost of any LACMTA Metro Rapid Bus Line Expansion Program or provide other transit enhancements.

Source: Los Angeles World Airports and AECOM, 2011.

Table GA-5
Ground Access Improvements - Alternative 3: Ground Transportation Facility (GTC)

As of: 16-Sep-2011

Line		Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
		(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
	Site Preparation					
1	Site Preparation / Utilities	$ 64,960,630	$ 9,744,094	$ 20,170,276	$ 94,875,000	Demolish the existing Manchester Square hardscape and landscape (115-acres + 11-acres south of Century Blvd. and east of Aviation Blvd.). Demolish and relocate utilities including any above ground electrical lines, protecting the sewer outfall(s), and implementing the necessary storm water drainage modifications.
	Subtotal	**$ 64,960,630**	**$ 9,744,094**	**$ 20,170,276**	**$ 94,875,000**	
	GTC Site Roadways					
2	Elevated Roadways	$ 182,800,000	$ 27,420,000	$ 56,759,400	$ 266,979,400	Constructs a variety of different lane configurations at a low elevation. The Passenger Processing Piers are envisioned to be three-levels; and this roadway must allow curbside drop-off and vehicle circulation at the third-level Departure level. Most of the vehicular traffic is envisioned to be above grade. Includes curbfront interface for buses, private autos, taxis, limos, etc.
3	On-Grade Roadways	$ 20,900,000	$ 3,135,000	$ 6,489,450	$ 30,524,450	Constructs a menu of different lane configurations at grade level. Includes curbfront interface for buses, private autos, taxis, limos, etc.
	Subtotal	**$ 203,700,000**	**$ 30,555,000**	**$ 63,248,850**	**$ 297,503,850**	
	Parking (Short and Long Term)					
4	Foundations	$ 19,630,800	$ 2,944,620	$ 6,095,363	$ 28,670,783	The structural system includes spread footing foundations, interior ramps and two 2-lane one-way circulation ramps.
5	Superstructure	$ 65,575,080	$ 9,836,262	$ 20,361,062	$ 95,772,404	Constructs three (3) multi-level pre-cast superstructure consisting of a total of 7,600 parking spaces; and includes perimeter walls at the top level.
6	Exterior Closure	$ 21,964,000	$ 3,294,600	$ 6,819,822	$ 32,078,422	The top level has a standing seam flat metal panel roof canopy covering over half of the floor area. There is also an architectural screen or similar façade allowing natural ventilation .
7	Interior	$ 11,590,000	$ 1,738,500	$ 3,598,695	$ 16,927,195	This includes the signage, painting, lighting and drainage, and special systems such as CCTV.
7a	Cast-in-Place Construction Premium	$ 29,159,300	$ 4,373,895	$ 9,053,963	$ 42,587,158	A pre-cast construction technique is described above. This line item is a premium cost if the cast-in-place approach is selected.
7c	Double-helix Ramp Premium	$ 9,467,320	$ 1,420,098	$ 2,939,603	$ 13,827,021	Interior ramps are used for vehicle circulation in the above garage. This line item is a premium if double-helix ramps are employed.
7c	Commercial Vehicle Holding Area	$ 2,000,000	$ 300,000	$ 621,000	$ 2,921,000	Constructs a 125,000 sq. ft. lot for commercial vehicles, including taxis, hotel/motel shuttles, door-to-door vans and limosines, to hold while awaiting pick-up circulation.
8	Parking Revenue Control System	$ 7,220,000	$ 1,083,000	$ 2,241,810	$ 10,544,810	This state of the art revenue collection system includes license plate recognition capability; automatic garage routing and parking availability indicators; credit card "swipe-at-entry" and traditional "cash-at booth" payment plans.
	Subtotal	**$ 166,606,500**	**$ 24,990,975**	**$ 51,731,318**	**$ 243,328,793**	

Table GA-5
Ground Access Improvements - Alternative 3: Ground Transportation Facility (GTC)

As of: 16-Sep-2011

Line		Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
		(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
	Passenger Processing Piers					
9	North Pier	$ 448,900,000	$ 67,335,000	$ 139,383,450	$ 655,618,450	Constructs a three-level pier facility: a departures level, an arrival level, and an APM level. This is envisioned to be about 700,000 sq. ft. facility of similar look and feel to the new Terminal Processing Facilities. Also included is one (1) elevated APM station on the second level utilizing a flow-through design with three platforms: the side platforms are approximately 30-feet by 300-feet and the center platform is approximately 55-feet by 300-feet. Deboarding passengers use the side platforms; whereas boarding passengers use the center platform. These platforms are elevated to an assumed height of 45-feet.
10	South Pier	$ 448,900,000	$ 67,335,000	$ 139,383,450	$ 655,618,450	Constructs a three-level pier facility: a departures level, an arrival level, and an APM level. This is envisioned to be about 700,000 sq. ft. facility of similar look and feel to the new Terminal Processing Facilities. Also included is one (1) elevated APM station on the second level utilizing a flow-through design with three platforms: the side platforms are approximately 30-feet by 300-feet and the center platform is approximately 55-feet by 300-feet. Deboarding passengers use the side platforms; whereas boarding passengers use the center platform. These platforms are elevated to an assumed height of 45-feet.
11	Construct 14-passenger bridges from the Piers to the Garages.	$ 37,800,000	$ 5,670,000	$ 11,736,900	$ 55,206,900	Build 12 bridges each 200-feet long and 14-feet wide. The cost includes foundations and structure, exterior closure and interior finish, and all mechanical and electrical requirements.
	Subtotal	**$ 935,600,000**	**$ 140,340,000**	**$ 290,503,800**	**$ 1,366,443,800**	
	Baggage Tunnel (GTC to Terminal Processing Facilities via RAC)					
12	Baggage Tunnel Construction	$ 408,000,000	$ 61,200,000	$ 126,684,000	$ 595,884,000	Constructs 13,000 linear feet of underground tunnel. Assumes that half the tunnel is open-cut construction (less expensive) and the other half is bore/drill construction (more expensive).
13	Baggage Tunnel Conveyance Equipment	$ 105,400,000	$ 15,810,000	$ 32,726,700	$ 153,936,700	Constructs a total of 26,000 linear feet (13,000 linear feet each way) of high-speed baggage conveyance in the tunnel.
	Subtotal	**$ 513,400,000**	**$ 77,010,000**	**$ 159,410,700**	**$ 749,820,700**	
	Other Costs					
14	Landscape Allowance	$ 5,000,000	$ 750,000	$ 1,552,500	$ 7,302,500	This landscaping budget provides a 20-foot wide by 5,240-foot long (roughly 105,000 sq. ft.) around the perimeter of the GTC.
15	MMRP Road and Intersection Improvements	$ 4,500,000	$ 675,000	$ 1,397,250	$ 6,572,250	This is an allowance for the mitigation of nine (9) MMRP intersections.
	Subtotal	**$ 9,500,000**	**$ 1,425,000**	**$ 2,949,750**	**$ 13,874,750**	
	Report Total	**$ 1,893,767,130**	**$ 284,065,069**	**$ 588,014,694**	**$ 2,765,846,893**	

Table GA-5
Ground Access Improvements - Alternative 3: Ground Transportation Facility (GTC)

As of: 16-Sep-2011

Line		Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
		(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	

Notes:

1) This estimate is based upon LAX Advanced Planning Ground Transportation Center (GTC) Phase 1 Final Report dated November 2005; and all costs are in 2011-dollars.

2) This estimate does not include the cost of environmental mitigation and/or soil remediation; or the potential land acquisition and/or business relocation costs of Manchester Square.

3) Line 15. Does not include the cost of any LACMTA Metro Rapid Bus Line Expansion Program or provide other transit enhancements.

Source: Los Angeles World Airports and AECOM, 2011

Table GA-6
Ground Access Improvements - Alternative 3: Intermodal Transportation Center (ITC)

As of: 16-Sep-2011

Line		Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
		(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
	Site Preparation					
1	Site Preparation / Utilities	$ 8,500,000	$ 1,275,000	$ 2,639,250	$ 12,414,250	Demolish existing hardscape and landscape (10-acres). Demolish and relocate any utilities that may be on the site. Relocation of the electrical substation is not included in this estimate, since this ITC option works around it. This estimate assumes the large storm sewer under 111th Street is not impacted.
	Subtotal	**$ 8,500,000**	**$ 1,275,000**	**$ 2,639,250**	**$ 12,414,250**	
	Customer Service Area (CSA)					
2	Customer Service Area	$ 28,200,000	$ 4,230,000	$ 8,756,100	$ 41,186,100	Constructs the Customer Service Area (CSA) on the ground floor of the garage. The CSA is 75,000 sq. ft.; and provides about kiosk check-in queuing and related space; security zones; a greeter lobby; a concessions area; public amenities, such as washrooms, etc.; public circulation; and various support offices.
	Subtotal	**$ 28,200,000**	**$ 4,230,000**	**$ 8,756,100**	**$ 41,186,100**	
	Itermodal Transportation Center (ITC) Garage					
5	Foundations	$ 24,321,528	$ 3,648,229	$ 7,551,834	$ 35,521,591	The structural system includes spread footing foundations and the two 2-lane double helix ramps and two 2-lane one-way circulation ramps.
6	Superstructure	$ 81,244,073	$ 12,186,611	$ 25,226,285	$ 118,656,968	Constructs a seven-level cast-in-place superstructure consisting of 9,400 parking spaces; and includes perimeter walls at Level 7 and code-mandated fire exits. The ground level of this garage houses the Customer Service Area (CSA).
7	Exterior Closure	$ 27,212,240	$ 4,081,836	$ 8,449,401	$ 39,743,477	Level 7 has a standing seam flat metal panel roof canopy covering about 80% of the floor area. There is also a an exterior architectural screen or similar façade allowing natural ventilation .
8	Interior	$ 14,374,600	$ 2,156,190	$ 4,463,313	$ 20,994,103	This includes the signage, painting, lighting and drainage, and special systems such as CCTV.
8a	Cast-in-Place Construction Premium	$ 36,126,838	$ 5,419,026	$ 11,217,383	$ 52,763,247	A pre-cast construction technique is described above. This line item is a premium cost if the cast-in-place approach is selected.
8b	Double-helix Ramp Premium	$ 11,729,511	$ 1,759,427	$ 3,642,013	$ 17,130,951	Interior ramps are used for vehicle circulation in the above garage. This line item is a premium if double-helix ramps are employed.
8c	Parking Revenue Control System	$ 8,930,000	$ 1,339,500	$ 2,772,765	$ 13,042,265	This state of the art revenue collection system includes license plate recognition capability; automatic garage routing and parking availability indicators; credit card "swipe-at-entry" and traditional "cash-at-booth" payment plans.
	Subtotal	**$ 203,938,790**	**$ 30,590,818**	**$ 63,322,994**	**$ 297,852,603**	
	Road and Intersection Improvement					
9	Road and Intersection Improvement	$ 12,250,000	$ 1,837,500	$ 3,803,625	$ 17,891,125	This roadway revision includes an allowance to revise the surface streets, as required, for this ITC; and includes an allowance for the mitigation of nine (9) MMRP intersections.
	Subtotal	**$ 12,250,000**	**$ 1,837,500**	**$ 3,803,625**	**$ 17,891,125**	

Table GA-6
Ground Access Improvements - Alternative 3: Intermodal Transportation Center (ITC)

As of: 16-Sep-2011

Line		Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
		(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
	Pedestrian bridge between ITC and Green Line Station					
9a	Green Line Station platform modifications	$ 7,800,000	$ 1,170,000	$ 2,421,900	$ 11,391,900	Construct modifications to the existing Green Line Station, including modifications to the existing escalator.
9b	Pedestrian bridge between ITC and Green Line Station	$ 6,200,000	$ 930,000	$ 1,925,100	$ 9,055,100	Construct a linear passenger bridge approximately 500-feet long by 12-feet wide. This is a simple, "train-station" style walkway and does not include any architectural detailing. To facilitate passenger movement, 400-feet of moving walkways are installed (200-feet each way).
	Subtotal	**$ 14,000,000**	**$ 2,100,000**	**$ 4,347,000**	**$ 20,447,000**	
	APM Maintenance and Storage Facility					
10	Facility Shell	$ 12,000,000	$ 1,800,000	$ 3,726,000	$ 17,526,000	Construct the shell for the underground level of the ITC which contains the APM maintenance facility, washing facility, employee parking and office space. It is anticipated the ceiling trusses for this facility are elaborate.
11	Power Distribution Substations	$ 60,000,000	$ 9,000,000	$ 18,630,000	$ 87,630,000	An allowance to construct six (6) power substations feeding the DC power distribution rails at various points along the APM1 and APM2 route.
12	Facility Fit-out	$ 10,000,000	$ 1,500,000	$ 3,105,000	$ 14,605,000	An allowance to finish out the interior space by; marking and striping the employee parking area, building out the office space, partitioning the maintenance and wash bays, etc.
	Subtotal	**$ 82,000,000**	**$ 12,300,000**	**$ 25,461,000**	**$ 119,761,000**	
	Subtotal	**$ 82,000,000**	**$ 12,300,000**	**$ 25,461,000**	**$ 119,761,000**	
	Report Total	**$ 348,888,790**	**$ 52,333,318**	**$ 108,329,969**	**$ 509,552,078**	

Notes:

1) This estimate is based upon LAX Advanced Planning ITC Phase 1 Final Submittal dated November 2005; and all costs are in 2011-dollars.
2) This estimate does not include the cost of environmental mitigation and/or soil remediation.
3) Line 1: The Master Plan describes moving the DWP electrical substation on the south side of the site. However, the ITC option described in this estimate does not require it to be relocated; and the cost for relocating it are not included in the estimate.
4) The APM1 Station is included in the APM1 Estimate.
5) Line 9. Does not include the cost of any LACMTA Metro Rapid Bus Line Expansion Program or provide other transit enhancements.
6) Line 6. Assumes the APM Maintenance Station is below grade and underneath the parking structure. The ceiling truss-work to support that facility is extensive; and an allowance is provided in Line 10.

Source: Los Angeles World Airports and AECOM, 2011.

Table GA-7
Ground Access Improvements - Alternative 3: Automated People Mover (APM)

	Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
	(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
APM1: ITC - RAC - CTA					
Guideway - Dual Lane - On-Grade	$ 5,897,000	$ 884,550	$ 1,831,019	$ 8,612,569	Constructs 2,000 linear feet of on-grade guideway. The guideway is configured as dual lane tracks.
Guideway - Dual Lane - Depressed	$ 15,480,000	$ 2,322,000	$ 4,806,540	$ 22,608,540	Constructs 3,000 linear feet of depressed guideway: 750-linear feet is directed to the underground maintenance facility; and 750-linear feet is directed to the underground ITC station. The guideway is configured as dual-lane tracks.
Guideway - Dual Lane - Elevated 25-feet	$ 112,787,136	$ 16,918,070	$ 35,020,406	$ 164,725,612	Constructs 12,750 linear feet of guideway elevated 25-feet above grade. The guideway is configured as dual-lane tracks.
Guideway - Dual Lane - Elevated 45-feet	$ 53,076,300	$ 7,961,445	$ 16,480,191	$ 77,517,936	Constructs 4,000 linear feet of guideway elevated 45-feet above grade. The guideway is configured as dual-lane tracks.
Subtotal	**$ 187,240,436**	**$ 28,086,065**	**$ 58,138,155**	**$ 273,464,657**	
APM1 Stations					
CTA	$ -	$ -	$ -	$ -	Four stations are priced as part of the Terminal Processing Facilities estimate.
RAC (Above ground station)	$ 25,000,000	$ 3,750,000	$ 7,762,500	$ 36,512,500	Constructs one (1) elevated APM station utilizing a flow-through design with three platforms: the side platforms are approximately 30-feet by 300-feet and the center platform is approximately 55-feet by 300-feet. Deboarding passengers use the side platforms; whereas boarding passengers use the center platform. The platform is elevated to an assumed height of 25-feet; and includes a passenger bridge connection to the RAC.
ITC (Below ground station)	$ 25,000,000	$ 3,750,000	$ 7,762,500	$ 36,512,500	Constructs one (1) underground APM station utilizing a flow-through design with three platforms: the side platforms are approximately 30-feet by 300-feet and the center platform is approximately 55-feet by 300-feet. Deboarding passengers use the side platforms; whereas boarding passengers use the center platform. The platform is underground; and includes a passenger bridge connection to the ITC.
Subtotal	**$ 50,000,000**	**$ 7,500,000**	**$ 15,525,000**	**$ 73,025,000**	
APM2: GTC - CTA					
Guideway - Dual Lane - On-Grade	$ 5,897,000	$ 884,550	$ 1,831,019	$ 8,612,569	Constructs 2,000-linear feet of on-grade guideway. The guideway is configured as two pairs of dual lane tracks and provides a connection between APM1 and APM2 for the Maintenance Facility.
Guideway - Dual Lane - Elevated 25-feet	$ 152,594,400	$ 22,889,160	$ 47,380,561	$ 222,864,121	Constructs a total of 17,250 linear feet of guideway elevated 25-feet above grade. The guideway is configured as two pairs of dual-lane track.
Guideway - Dual Lane - Elevated 45-feet	$ 126,056,300	$ 18,908,445	$ 39,140,481	$ 184,105,226	Constructs 9,500 linear feet of guideway elevated 45-feet above grade. The guideway is configured as two pairs of dual-lane track.
Guideway - Dual Lane - Elevated 65-feet	$ 77,845,200	$ 11,676,780	$ 24,170,935	$ 113,692,915	Constructs 4,400 linear feet of guideway elevated 65-feet above grade. This 65-foot elevation accomplishes the Century Blvd. crossings of APM1. The guideway is configured as two pairs of dual-lane track.
Subtotal	**$ 362,392,900**	**$ 54,358,935**	**$ 112,522,995**	**$ 529,274,830**	

Table GA-7
Ground Access Improvements - Alternative 3: Automated People Mover (APM)

	Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
	(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
APM2 Stations					
CTA	$ -	$ -	$ -	$ -	Four stations are priced as part of the Terminal Processing Facilities estimate.
GTC	$ -	$ -	$ -	$ -	Two stations are priced as part of the GTC Estimate: one in the North Pier and one in the South Pier.
Subtotal	**$ -**	**$ -**	**$ -**	**$ -**	
APM Maintenance and Storage Facility					
Facility Shell	$ 12,000,000	$ 1,800,000	$ 3,726,000	$ 17,526,000	Construct the shell for the underground Airside APM maintenance facility, washing facility, employee parking and office space. It is anticipated the ceiling trusses for this facility are elaborate; and would support airplane movement and/or parking at surface level. The excavation of this facility is expected to be done in parallel with the MSC construction; via a cut-and-cover technique. This estimate also includes a hatch to the surface which is large enough to periodically extract a train car.
Power Distribution Substations	$ 20,000,000	$ 3,000,000	$ 6,210,000	$ 29,210,000	An allowance to construct two (2) power substations feeding the DC power distribution rails and necessary redundancy for the Airside APM. This allowance covers the "drive room" if a cable-propelled technology is selected.
Facility Fit-out	$ 5,000,000	$ 750,000	$ 1,552,500	$ 7,302,500	An allowance to finish out the interior space by; building out the office space, partitioning the maintenance and wash bays, etc.
Subtotal	**$ 37,000,000**	**$ 5,550,000**	**$ 11,488,500**	**$ 54,038,500**	
APM Infrastructure Subtotal	**$ 636,633,336**	**$ 95,495,000**	**$ 197,674,651**	**$ 929,802,987**	
APM Cars and Equipment	**$ 615,600,000**	**$ 92,340,000**	**$ 191,143,800**	**$ 900,000,000**	An allowance for cars and equipment.
APM System Total	**$ 1,252,233,336**	**$ 187,835,000**	**$ 388,818,451**	**$ 1,829,802,987**	

Notes:
1) This estimate is based upon LAX Advanced Planning APM Phase 1 Final Submittal dated November 2005; and all costs are in 2011-dollars.
2) This estimate does not include the cost of environmental mitigation and/or soil remediation.
3) This estimate does not include the cost of the actual APM Systems, which could be approximately $350m for APM1, $550m for APM2 and $110m for the Airside APM.

Source: Los Angeles World Airports and AECOM, 2011.

Table GA-8
Ground Access Improvements - Alternative 3: Access Roadways

As of: 16-Sep-2011

Line		Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
		(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
	Roadways connecting ITC and GTC (parallel to Aviation Blvd.)					
1	Elevated Roadways	$ 52,400,000	$ 7,860,000	$ 16,270,200	$ 76,530,200	Constructs a variety of different lane configurations at a low elevation of elevated roadways that connect the ITC and the GTC. This roadway includes on/off ramp connections to Century Blvd. and Aviation Blvd.
2	On-Grade Roadways	$ 17,500,000	$ 2,625,000	$ 5,433,750	$ 25,558,750	Constructs a variety of different lane configurations at grade level to connect the ITC and the GTC. This roadway includes on/off ramp connections to Century Blvd. and Aviation Blvd.
	Subtotal	**$ 69,900,000**	**$ 10,485,000**	**$ 21,703,950**	**$ 102,088,950**	
	Freeway Access Revisions					
3	I-405	$ 234,000,000	$ 35,100,000	$ 72,657,000	$ 341,757,000	Constructs a variety of different lane configurations at grade and low elevations for a new on/off-ramp on the I-405. This project includes demolition of existing roadways, construction of new roadways, lighting, striping and an allowance for maintaining existing traffic during construction.
4	I-105	$ 50,000,000	$ 7,500,000	$ 15,525,000	$ 73,025,000	Constructs a variety of different lane configurations at grade and low elevations for a new on/off-ramp on the I-105. This project includes demolition of existing roadways, construction of new roadways, lighting, striping and an allowance for maintaining existing traffic during construction.
	Subtotal	**$ 284,000,000**	**$ 42,600,000**	**$ 88,182,000**	**$ 414,782,000**	
	Report Total	**$ 353,900,000**	**$ 53,085,000**	**$ 109,885,950**	**$ 516,870,950**	

Notes:

1) This estimate is based upon LAX Advanced Planning Ground Transportation Center (GTC) Phase 1 Final Report dated November 2005; and all costs are in 2011-dollars.

2) This estimate does not include the cost of environmental mitigation and/or soil remediation; or the potential land acquisition and/or business relocation costs of impacted areas along Aviation Blvd. and/or near the I-105 and I-405 modifications.

Source: Los Angeles World Airports and AECOM, 2011

Table GA-9
Ground Access Improvements - Alternative 3: West Employee Parking

As of: 16-Sep-2011

Line	*West Employee Parking Facility*	Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
		(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
	Site Preparation					
1	Site Preparation / Utilities	$ 10,500,000	$ 1,575,000	$ 3,260,250	$ 15,335,250	Demolish any existing facilities, hardscape and landscape (22-acres). Demolish and relocate utilities; and implement the necessary storm water drainage modifications; grading and site preparation.
	Subtotal	**$ 10,500,000**	**$ 1,575,000**	**$ 3,260,250**	**$ 15,335,250**	
	Security Screening Area					
2	Security Screening Area	$ 29,600,000	$ 4,440,000	$ 9,190,800	$ 43,230,800	Constructs the Security Screening Area (SSA) on the ground floor level of the garage. The SSA is 89,000 sq. ft. (approximately 240-feet by 420-feet); and provides screening counters with 40-foot queuing, a large lobby, restrooms, TSA office space, etc. Employee circulation is accomplished by providing six (6) escalators, eight (8) elevators and a central staircase. This area will be similar to passenger terminal screening checkpoints, including magnetometers, x-ray, ETD, search stations, CCTV monitoring and other employee verification.
	Subtotal	**$ 29,600,000**	**$ 4,440,000**	**$ 9,190,800**	**$ 43,230,800**	
	Bus and Employee Plaza					
3	Bus Plaza / Employee Drop-off	$ 5,900,000	$ 885,000	$ 1,831,950	$ 8,616,950	The Bus Plaza consists of an open bus-drop-off area (82,300 sq. ft.) concrete, paved area; and consists of two sections. On the north side of the garage is the smaller bus plaza designed for MTA bus drop-off and "kiss-n-ride" employee drop-off. The larger bus plaza is on the east side of the facility; and serves the shuttle busses that carry outbound employees to the site and inbound employees to the garage. The project includes security features to separate the inbound busses from outbound; curbs and gutters on both sides of the bus lanes and road markings; concrete sidewalks; high-quality and energy efficient lighting; and an allowance for benches, trash recepticles and planters.
4	Employee Plaza	$ 8,700,000	$ 1,305,000	$ 2,701,350	$ 12,706,350	The Employee Plaza is approximately 1,400-feet by 70-feet (98,000 sq. ft.); and consists of two sections. The smaller section is north of the facility and serves the MTA and "kiss-n-ride" employee drop-off areas. Employees from these areas will have sidewalk access to the Secured Screening Area. The larger employee plaza is on the east side of the facility serves the larger bus plaza. This project includes security features designed to separate screened outbound employees separate from unscreened or inbound employees; landscaping, lighting and an allowance for benches, trash recepticles and planters.
	Subtotal	**$ 14,600,000**	**$ 2,190,000**	**$ 4,533,300**	**$ 21,323,300**	
	Ready Return Parking Structure					
5	Foundations	$ 32,029,200	$ 4,804,380	$ 9,945,067	$ 46,778,647	The structural system includes spread footing foundations and necessary circulation ramps.
6	Superstructure	$ 106,990,920	$ 16,048,638	$ 33,220,681	$ 156,260,239	Constructs a four-level cast-in-place superstructure consisting of 12,400 parking spaces; and includes perimeter walls at Level 4 and code-mandated fire exits. The ground floor houses the Secure Screening Area (SSA).
7	Exterior Closure	$ 35,836,000	$ 5,375,400	$ 11,127,078	$ 52,338,478	Level 4 has a standing seam flat metal panel roof canopy approximately 576,000 sq. ft. covering about 80% of the floor area. There is also a 40-foot high exterior architecutral screen or similar façade allowing natural ventilation .

Table GA-9
Ground Access Improvements - Alternative 3: West Employee Parking

As of: 16-Sep-2011

Line	*West Employee Parking Facility*	Forecast Construction Cost	Construction Contingency	Soft Costs (27%)	Forecast Total Project Cost	Scope Summary
		(A)	B=(15%) x (A)	C=(27%) x (A + B)	D=(A+B+C)	
8	Interior	$ 18,910,000	$ 2,836,500	$ 5,871,555	$ 27,618,055	This includes the signage, painting, lighting and drainage, and special systems such as CCTV.
8a	Cast-in-Place Construction Premium	$ 47,575,700	$ 7,136,355	$ 14,772,255	$ 69,484,310	A pre-cast construction technique is described above. This line item is a premium cost if the cast-in-place approach is selected.
8b	Double-helix Ramp Premium	$ 15,446,680	$ 2,317,002	$ 4,796,194	$ 22,559,876	Interior ramps are used for vehicle circulation in the above garage. This line item is a premium if double-helix ramps are employed.
8c	Parking Revenue Control System	$ 11,780,000	$ 1,767,000	$ 3,657,690	$ 17,204,690	This state of the art revenue collection system includes license plate recognition capability; automatic garage routing and parking availability indicators; credit card "swipe-at-entry" and traditional "cash-at-booth" payment plans.
	Subtotal	**$ 268,568,500**	**$ 40,285,275**	**$ 83,390,519**	**$ 392,244,294**	
	Road and Intersection Improvement					
9	Road and Intersection Improvement	$ 11,750,000	$ 1,762,500	$ 3,648,375	$ 17,160,875	This roadway revision includes an allowance for revising the Pershing Drive and World Way West interchanges; an allowance for modifying World Way West traffic flows; an allowance for AOA Security gates and revising airfield access roads; and mitigation of seven (7) MMRP intersections.
	Subtotal	**$ 11,750,000**	**$ 1,762,500**	**$ 3,648,375**	**$ 17,160,875**	
	Other Costs					
10	Landscape Allowance	$ 1,000,000	$ 150,000	$ 310,500	$ 1,460,500	Provides landscaping for roughly 45,000 sq. ft.; and includes the building perimeter and World Way West frontage area.
	Subtotal	**$ 1,000,000**	**$ 150,000**	**$ 310,500**	**$ 1,460,500**	
	Report Total	**$ 336,018,500**	**$ 50,402,775**	**$ 104,333,744**	**$ 490,755,019**	

Notes:

1) Line 9: This cost does not include the potential fair share contribution to LACMTA or the LA County Marina Expressway.
2) This estimate does not include the cost of environmental mitigation and/or soil remediation.
3) This estimate does not include the cost of shuttle buses; and does not provide maintenance or fueling.
5) Costs are expressed in 2011-dollars.

Source: Los Angeles World Airports and AECOM, 2011