

Updated Capital Costs Report

MEMORANDUM

To: Scott Hartwell, Project Manager

From: Greg Kyle, AICP

Kimley-Horn and Associates, Inc.

Date: March 10, 2022

Subject: North Hollywood to Pasadena Bus Rapid Transit Corridor Project

Summary of Capital Cost Updates

The capital cost estimate for the North Hollywood to Pasadena Bus Rapid Transit (BRT) Corridor Project was updated to reflect several scope and basis of design decisions in late 2021 and early 2022. This memorandum summarizes these assumptions and corresponding revisions to the capital cost estimate, provides an updated 2022 Cost Estimate Summary Table, and presents the capital cost estimate in the main worksheet of the Federal Transit Administration's (FTA) Standard Cost Categories (SCC) format.

Overall capital cost estimate factors and project-wide elements that were revised, updated, or confirmed as part of this update included:

- Updated the base year for the unit prices of the capital cost estimate from 2020 to 2021.
 - A 5% increase was applied to unit prices from the 2020 capital cost estimate, except for the cost of asphalt which was increased more based on latest cost information.
- Updated the inflation rate used for year-of-expenditure (YOE) calculations from 3% to 5% to reflect current market conditions.
- Did not adjust contingency or professional services assumptions.
- Confirmed public art allowance is calculated as 0.5% of the overall estimated construction cost.
 - Excluded from the calculation of the public art allowance: temporary and permanent right-of-way acquisitions, vehicle procurement, professional services, and unallocated contingency.
- Reduced red colored pavement for dedicated bus lanes from full extent treatment to application only at emphasis locations (this approach is consistent with Advanced Conceptual Engineering (ACE) drawings prepared for the Eagle Rock segment of the Project).
- Reduced fiber optic duct bank assumptions for station communications from ¼ mile per station to 300 feet per station, assuming there will be opportunities to

- connect with existing commercial fiber networks based on input of Metro Systems and Telecommunications Engineer.
- Revised vehicle costs to match information provided in Table 8-2 of the LA Metro ZEB Master Plan. The revised vehicle costs include spare parts and procurement support. Allocated contingency and inflation were not applied to the vehicle costs.
- Revised costs for electric vehicle charging units at the Metro Bus Division where the Project's vehicles will be stored, based on information obtained from the LA Metro ZEB Master Plan. Allocated contingency and inflation were not applied to the electric vehicle charging units.
- Adjusted the estimate so that contingency, professional services, and inflation factors are not applied to the allowances established for improvements at the Bus Operation Center (BOC).

Cost estimate revisions for the new design option in the Burbank segment of the Project included:

- New route alignment from Olive Avenue to Alameda Avenue to Buena Vista Street and back to Olive Avenue.
 - This new route alignment eliminated the need for roadway widening, milling, and resurfacing on Olive Avenue between Alameda Avenue and Buena Vista Street.
- Consolidated stations.
 - o Eliminated station at Olive Avenue/Alameda Avenue.
 - Added station at Alameda Avenue/Naomi Street.
 - o Eliminated station at Olive Avenue/Buena Vista Street.
- Relocated the station serving the Burbank Downtown Metrolink Station from the Olive Avenue bridge to the Olive Avenue/Lake Street intersection.
 - Removed costs associated with improvements to the Olive Avenue bridge.
- Mixed-flow operations for the BRT on Glenoaks Boulevard between Olive Avenue and Providencia Avenue.
 - o Eliminated the need for roadway widening, milling, and resurfacing.

Cost estimate revisions for new design options in the Eagle Rock segment of the Project included:

- Updated the cost estimate per the ACE drawings prepared for the one travel lane per direction and the two travel lanes per direction design options.
- Removed active transportation improvements (curb extensions) that will be constructed by others (City of Los Angeles) based on ongoing coordination for consistency with the Project's design configuration.

Cost estimate revisions for the Glendale segment of the Project included:

• Added an allowance for bicycle facility improvements along Glenoaks Boulevard, which will be coordinated with the City of Glendale.

The table below summarizes the current Year 2022 capital cost estimate for the Project, reflecting the adjustments described above.

2022 Cost Estimate Update						
scc	Cost Category	2022 Estimate YOE (x,1000)				
20	Station Stops	\$22,949				
40	Roadway / Utilities / Special Conditions	\$115,207				
50	Systems	\$40,502				
10-50	Construction Subtotal	\$178,657				
60	Right-of-Way	\$18,275				
70	Vehicles	\$22,308				
80	Professional Services	\$63,054				
90	Unallocated Contingency	\$26,609				
10-100	Total Project Cost	\$308,904				
	Low (-15%)	\$262,568				
	High (+25%)	\$386,129				

Attachment:

• FTA SCC Main Worksheet - Build

MAIN WORKSHEET-BUILD

North Hollywood to Pasadena Bus Rapid Transit

Los Angeles County, California

Proposed Project (Route Options A1, B, C, D, E1, F-2-Lane, G1, H1)

Today's Date Yr of Base Year \$

3/9/22 2021

2024 Yr of Revenue Ops

10 GUIDEWAY & TRACK ELEMENTS (route miles) 10.01 Guideway: Surface Streets 10.02 Guideway: Freeway 20 STATIONS, STOPS, TERMINALS, INTERMODAL (number) 20.01 At-grade station, stop, shelter, mall, terminal, platform 20.02 Aerial station, stop, shelter, mall, terminal, platform 20.03 Underground station, stop, shelter, mall, terminal, platform 20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc. 20.05 Joint development 20.06 Automobile parking multi-story structure 20.07 Elevators, escalators 30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS 30.01 Administration Building: Office, sales, storage, revenue counting 30.02 Light Maintenance Facility 30.03 Heavy Maintenance Facility 30.04 Storage or Maintenance of Way Building 30.05 Yard and Yard Track 40 SITEWORK & SPECIAL CONDITIONS 40.01 Demolition, Clearing, Earthwork 40.02 Site Utilities, Utility Relocation 40.03 Haz. mat'l, contam'd soil removal/mitigation, ground water treatments 40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks 40.05 Site structures including retaining walls, sound walls 40.06 Pedestrian / bike access and accommodation, landscaping 40.07 Automobile, bus, van accessways including roads, parking lots	Base Year Dollars w/o Contingency (X000) 15,691 15,691 0 0 0 0 0 0 0 0 0 0 0 0 78,947 1,108 7,029 111 0 0 10,243 41,828	Base Year Dollars Allocated Contingency (X000) 0 4,707 4,707 0 0 0 0 0 0 0 0 0 0 0 0	Base Year Dollars Allocated Contingency % 30% 30% 30% 30% 30% 30%	Base Year Dollars TOTAL (X000) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Base Year Dollars Percentage of Construction Cost 13%	Base Year Dollars Percentage of Total Project Cost	Escalation Per Annum @ 3% to 5% (X000) 2,550 2,550 0 12,801 180 1,142 18	VOE Dollars Total (X000) 0 22,949 22,949 0 115,207 1,620 10,280 162
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 40.01 Demolition, Clearing, Earthwork 40.02 Site Utilities, Utility Relocation 40.03 Haz. mat'l, contam'd soil removal/mitigation, ground water treatments 40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks 40.05 Site structures including retaining walls, sound walls 40.06 Pedestrian / bike access and accommodation, landscaping 	1,108 7,029 111 0 0 10,243 41,828	332 2,109 33 0 0 3,073	30% 30% 30%	1,440 9,138 144 0	1% 6%	1% 3%	180 1,142	1,620 10,280
40.01 Demolition, Clearing, Earthwork 40.02 Site Utilities, Utility Relocation 40.03 Haz. mat'l, contam'd soil removal/mitigation, ground water treatments 40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks 40.05 Site structures including retaining walls, sound walls 40.06 Pedestrian / bike access and accommodation, landscaping	1,108 7,029 111 0 0 10,243 41,828	332 2,109 33 0 0 3,073	30% 30% 30%	1,440 9,138 144 0	1% 6%	1% 3%	180 1,142	1,620 10,280
40.02 Site Utilities, Utility Relocation 40.03 Haz. mat'l, contam'd soil removal/mitigation, ground water treatments 40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks 40.05 Site structures including retaining walls, sound walls 40.06 Pedestrian / bike access and accommodation, landscaping	7,029 111 0 0 10,243 41,828	2,109 33 0 0 3,073	30% 30% 30%	9,138 144 0 0	6%	3%	1,142	10,280
40.03 Haz. mat'l, contam'd soil removal/mitigation, ground water treatments 40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks 40.05 Site structures including retaining walls, sound walls 40.06 Pedestrian / bike access and accommodation, landscaping	111 0 0 10,243 41,828	33 0 0 3,073	30%	144 0 0				
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks 40.05 Site structures including retaining walls, sound walls 40.06 Pedestrian / bike access and accommodation, landscaping	0 0 10,243 41,828	0 0 3,073	30%	0				
40.06 Pedestrian / bike access and accommodation, landscaping	10,243 41,828	3,073						
	41,828			12 216	l .			
40.07 Automobile bus van accessways including roads parking lots		12.323			8%	5%	1,664	14,980
			29%	54,151	34%	20%	6,769	60,920
40.08 Temporary Facilities and other indirect costs during construction 40.09 Public Art Allowance	18,017 612	5,405 184	30% 30%	23,422 796	15% 1%	9% 0.29%	2,928 99	26,350 895
50 SYSTEMS	28,397	7,604	3076	36,001	23%	13%	4,500	40,502
50.01 Train control and signals	0	0		0	2070	1070	4,000	40,002
50.02 Traffic signals and crossing protection	15,590	4,587	29%	20,177	13%	7%	2,522	22,699
50.03 Traction power supply: substations	2,750	0	0%	2,750	2%	1%	344	3,094
50.04 Traction power distribution: catenary and third rail	0	0	070	0	270	170	011	0,004
50.05 Communications	9,217	2,765	30%	11,982	8%	4%	1,498	13,480
50.06 Fare collection system and equipment	840	252	30%	1,092	0.69%	0.40%	137	1,229
50.07 Central Control	0	0	0%	0	0.03 //	0%	0	0
	123,036	35,771	070	158,807	100%	59%	19,851	178,657
Construction Subtotal (10 - 50)		435			100%		19,001	
60 ROW, LAND, EXISTING IMPROVEMENTS	6,450		000/	6,885	40/	3%	400	18,275
60.01 Purchase or lease of real estate 60.02 Relocation of existing households and businesses	1,450 0	435 0	30% 0%	1,885 0	1%	1%	189	2,074
60.03 Allowance for Bus Operations Center Contribution	5,000	0	0%	5,000	3%	2%	0	5,000
61.03 Allowance for Vehicle Chargers at Division	11,201	0	0%	11,201	7%	4%	0	11,201
70 VEHICLES	22,308	0		22,308	- , ,	8%		22,308
70.04 Bus	21,672	0	0%	21,672	14%	8%	0	21,672
70.05 Procurement Support	120	0	0%	120			0	120
70.06 Non-revenue vehicles	0	0	0%	0				
70.07 Spare parts	516	0	0%	516	0%	0%	0	516
80 PROFESSIONAL SERVICES (applies to Cats. 10-50)	58,758	0		58,758		22%	4,296	63,054
80.01 Project Development	9,528			9,528	6%	4%	429	9,957
80.02 Final Design	12,705	İ		12,705	8%	5%	572	13,276
80.03 Project Management for Design and Construction	15,881		1	15,881	10%	6%	715	16,595
80.04 Construction Administration & Management	7,940			7,940	5%	3%	993	8,933
80.05 Professional Liability and other Non-Construction Insurance	1,588			1,588	1%	1%	199	1,787
80.06 Legal; Permits; Review Fees by other agencies, cities, etc.	6,352			6,352	4%	2%	794	7,146
80.07 Surveys, Testing, Investigation, Inspection	3,176		 	3,176	2%	1%	397	3,573
80.08 Start up	1,588		+	1,588	1%	1%	199	1,787
Subtotal (10 - 80)	210,552	36,206		246,758	. 70	91%	.00	282,294
90 UNALLOCATED CONTINGENCY	210,002	30,200		23,056		91%		26,609
				269,814		100%		308,904
Subtotal (10 - 90)				EXCLUDED		100%		EXCLUDED
100 FINANCE CHARGES Total Project Cost (10, 100)				269,814		100%		308,904
Total Project Cost (10 - 100) Allocated Contingency as % of Base Yr Dollars w/o Contingency	1			17.20%		100%		300,904

Allocated Contingency as % of Base Yr Dollars w/o Contingency Unallocated Contingency as % of Base Yr Dollars w/o Contingency Total Contingency as % of Base Yr Dollars w/o Contingency

Unallocated Contingency as % of Subtotal (10 - 80)

YOE Construction Cost per Mile (X000)

YOE Total Project Cost per Mile Not Including Vehicles (X000)

YOE Total Project Cost per Mile (X000)

10.95% 28.15% 9.34%

Low (-15%)

High (+25%)

\$386,129

\$262,568