6 PROJECT COSTS AND OPERATIONS

6.1 Introduction

This chapter discusses the estimated costs for building, operating, and maintaining the Los Angeles to Anaheim Project Section (project section) of the California High-Speed Rail (HSR) System, based on a preliminary level of design that would be used in preparing this project-level Draft Environmental Impact Report (EIR)/Environmental Impact Statement (EIS). Information about the approach and additional details in preparing the construction cost estimates are provided in Volume 2 of this document and include:

- Appendix 2-E, *Operations and Service Plan*, provides background information on the intended service and operations of the HSR system to provide sufficient detail for the environmental evaluation of proposed HSR operations.
- Appendix 6-A, *High-Speed Rail Operating and Maintenance Cost for Use in Environmental Impact Report/Environmental Impact Statement Project-Level Analysis* (Authority 2017), summarizes the assumptions used to estimate full system HSR operations and maintenance (O&M) costs.
- Appendix 6-B, *Los Angeles to Anaheim Project Section Preliminary Engineering for Project Definition (PEPD) Record Set Capital Cost Estimate Report* (Authority 2025), presents the capital cost estimating methodology and summary of capital cost estimates. As stated in the report, the construction cost estimates were developed for each alternative based on the PEPD design plans, which are the same plans used in the environmental impact analysis in this Draft EIR/EIS.

The sections below discuss capital and O&M cost estimating methodology, assumptions, and costs. Additionally, vehicle and O&M costs (Appendix 6-A) are based on the California High-Speed Rail Authority's (Authority) 2016 Business Plan for consistency with the environmental impact analysis.[1]

6.2 Capital Costs

Capital costs represent the total cost associated with the design, management, land acquisition, and construction of the HSR system. The estimated long-term O&M costs include both train operations and infrastructure maintenance. Operations consist of labor costs, electrical power, and other factors required to keep the California HSR System in service, whereas maintenance includes routine servicing of vehicles, maintenance of the tracks, signals, communications, and other systems needed to keep the system safe and reliable.

[1] The analysis presented in this Draft EIR/EIS was initiated using the 2023 Project Update Report in lieu of the 2024 Business Plan, which was not available at the time this estimate was prepared. Following preparation of the Los Angeles to Anaheim Project Section Draft EIR/EIS, the Authority on February 9, 2024, released its Draft 2024 Business Plan for a 60-day public review and comment period. The ridership estimates for the project section included in the 2024 Business Plan are lower than previously reported, primarily because of a decrease in California population projections. In the 2024 Business Plan, the Phase 1 medium ridership forecast for 2040 is projected at 28.4 million, and the high ridership forecast is 30.6 million (2024 Draft Business Plan, p. 92). Even with this reduction in projected ridership, the Authority continues to conclude that building electrified HSR in California remains economically beneficial (2024 Business Plan, Chapter 5, Forecasts and Estimates, p. 83). Note that O&M costs are provided in this analysis using the 2016 Business Plan; refer to Appendix 6-A.

6.2.1 Standardized Capital Cost Categories

To help evaluate and compare project construction costs, the Authority, in consultation with the Federal Railroad Administration, developed 10 main standardized capital cost categories. Each standard cost category is briefly described below:

- **10 Track Structures and Track:** Includes elevated structures (bridges and viaducts), embankments and open cuts, retaining wall systems, tunnels, culverts and drainage structures, track (ballasted and nonballasted), and special trackwork.
- **20 Stations, Terminals, Intermodal:** Includes rough grading; excavation; station structures; enclosures; finishes; equipment; mechanical and electrical components, including heating, ventilating, and air conditioning; station power; lighting; public address/customer information systems; station site elements, such as pedestrian/bike access and accommodation; landscaping for parking lots; automobile, bus, and van access ways, including roads; and safety systems, such as fire detection and prevention, security surveillance, access control, and life safety systems.
- **30 Support Facilities: Yards, Shops, Administration, Buildings:** Includes rolling stock service, inspection, storage, heavy and light maintenance and overhaul facilities and equipment, as well as associated yard tracks and electrification. In addition, maintenance-of-way facilities are included in this cost category.
- **40 Sitework, Right-of-Way, Land, Existing Improvements:** Includes cost of demolition, hazardous materials removals, environmental mitigation, utility relocations, noise mitigation, intrusion protection, grade separations, roadway improvements, acquisition of real estate, and temporary facilities and other indirect costs.
- **50 Communications and Signaling:** Includes all costs of implementing automatic train control systems, inclusive of Positive Train Control and intrusion detection where it is applicable.
- **60 Electric Traction:** Includes costs of traction power supply system, including supply, paralleling, and switching substations as well as connections to the power utilities and the traction power distribution system in the form of the overhead contact system.
- **70 Vehicles:** Includes costs for acquisition of the trainsets (design, prototype unit, and production and delivery of trainsets to the project site[s] on an annual basis). Acquisition of trainsets is considered a systemwide cost and is not included as part of the cost of individual HSR study alternatives.
- **80 Professional Services:** Includes all professional, technical, and management services related to the design and construction of infrastructure (Categories 10 through 60) during the preliminary engineering, final design, and construction phases of the project/program (as applicable).
- **90 Unallocated Contingency:** Includes program reserves.
- **100 Finance Charges:** Includes finance charges expected to be paid by the project/program sponsor/grantee prior to either the completion of the project or the fulfillment of the Federal Railroad Administration funding commitment, whichever occurs later in time (not included in the estimate).

The estimating approach presented in Appendix 6-B has been done in a manner that (1) allows consistent application to each alternative to facilitate comparisons; (2) provides the proper foundation for more detailed estimates as selected alternative(s) are further evaluated; and (3) provides the basis for subsequent construction package procurement–level estimates with additional guidelines for a more detailed capital cost estimate. Estimating methodologies are not static and were developed to be flexible enough to adjust to the needs of the project's stage in the development process. Where the level of design does not support quantity measurements, parametric estimating techniques were used.

Allocated contingency is added to each cost category based on an assessment of the quality of design information, means and methods, and site accessibility available for individual items of work. This contingency typically falls in a range of 10 to 25 percent. The exact percentage selected for each cost category is based on professional judgment and experience related to the cost variability typically found for items of work in a particular cost category. Unallocated contingency is typically included to address uncertainties that are more global in nature like schedule delays, changes in contracting environment, or other such issues that are not associated with individual construction activities. Unallocated contingencies will be estimated at 5 percent of the total construction costs.

An allowance to account for the cost of environmental mitigation that relates to hydrology and water resources, wetland impacts, hazardous material, historic/archaeology, safety and security, noise, vibration, and air quality during construction and permanent aesthetic impacts is included in the total capital cost.

Additional assumptions specific to the project section are provided in Section 6.3.1, Assumptions.

6.2.2 Los Angeles to Anaheim Project Section Build Alternatives

The cost estimate was developed for the Shared Passenger Track Alternatives by using recent bid data from large transportation projects in the western United States and by developing specific, bottom-up unit pricing to reflect common HSR elements and construction methods with an adjustment for Los Angeles County and Orange County labor and material costs. All material quantities for the project section are estimated based on a preliminary level of design. This level of design has generally been defined as encompassing at-grade or elevated profiles, structure types, placement of retaining walls, and earth fill. Stations are conceptual, but roadway and utility relocations have been identified and power substations have been sized and located.

The capital costs include the total labor effort and materials to build the project section, including utility relocations and modifications to roadways required to accommodate HSR grade-separated guideways. It should be noted that the capital cost estimate reflects only related infrastructure improvements; planned infrastructure improvements from which the project would benefit that would occur regardless of project implementation are not included in capital cost estimates.

Estimates are prepared in base-year dollars, with the base year defined as the 2023 calendar year. Unit costs are updated annually or as required. For cost estimates with a base year that is older than the current calendar by one or more years, actual historical construction cost index values are used to calculate the escalation rate to be applied to bring a cost from the period in question to the present.

Standardized Capital Cost Category 40 estimated costs include right-of-way, property acquisition, and environmental mitigation. Right-of-way costs are estimated based on the preliminary design and provided in the Los Angeles to Anaheim Project Section PEPD design and preliminary right-of-way requirements reports. However, as the design of the project is refined, the right-of-way limits would be reassessed to reflect refined property acquisition needs. As a result, property acquisition costs are estimated in broad categories (i.e., urban, suburban, and rural and by population-density level), based on local land values rather than relying on a parcel-by-parcel assessment at this phase of project development. Right-of-way cost estimates involve preparing estimated quantities of affected properties, either permanent takes or temporary easements, that result from construction, operation, and maintenance of proposed HSR alignment alternatives. Environmental mitigation costs are estimated at approximately 3 percent of the total cost of track structures, track work, station buildings, roadway modification, and highway grade separation, given potential project impacts and typical mitigation costs in the region (Appendix 6-B).

The capital cost estimates for the project alternatives do not include the cost of acquiring HSR vehicles (Standardized Capital Cost Category 70) because the vehicles would be part of the statewide system and are not associated with building individual sections. However, it should be noted that, consistent with the Authority's 2023 Project Update Report issued March 1, 2023 (Authority 2023), the cost of vehicles was determined by using publicly available data regarding recent sales of comparable equipment to other HSR projects around the world. Additional costs

are included for adaptation of existing trainset designs to meet U.S. safety regulations and to comply with "Buy America"[2] requirements. The systemwide costs of vehicle procurement are divided into two milestones: (1) Silicon Valley to the Central Valley and (2) Phase 1, which extends from San Francisco in the north to Anaheim in the south. Total vehicle procurement cost is estimated at $4.5 billion in 2017 dollars.

Again, using cost information collected from large transportation projects and adjusting for Los Angeles region labor and material costs, Professional Services are estimated at 6 percent of the construction costs. Also presented under the Professional Services cost category and calculated as a percentage of construction costs are preliminary engineering (2 percent of Professional Services), final design (6 percent of Professional Services), construction management (4 percent of Professional Services), program management (3 percent of Professional Services), and agency costs (0.5 percent of Professional Services). These add-on costs are calculated as a percentage of construction costs only (applied individually and not cumulatively and excluding vehicle procurement and right-of-way costs). Environmental mitigation costs are estimated at approximately 3 percent of the capital cost, given potential project impacts and typical mitigation costs in the region.

At this preliminary stage of design, the capital cost estimates include contingencies to account for changes in material costs and unforeseen circumstances during project design. Currently, allocated contingencies (money reserves assigned to each cost category to cover risks associated with design uncertainty) are assumed to be between 10 percent and 25 percent of the estimated construction and right-of-way acquisition costs, and unallocated contingency (project reserves intended to cover unknown risks) is estimated at 5 percent of the construction costs.

Clear right-of-way would be obtained, and out-of-sequence work is not anticipated. There may be additional costs because of restrictions for working in an active rail corridor. Utility company relocation agreements would need to be obtained, and out-of-sequence work is not anticipated.

The cost estimates do not include costs associated with HSR track construction just north of U.S. Highway 101 to First Street because this work is analyzed in the Link Union Station environmental document and is not part of either Shared Passenger Track Alternative A or Shared Passenger Track Alternative B. The cost estimate does include costs associated with the Authority's installation of overhead contact system just north of U.S. Highway 101 to First Street because this work is included in both Shared Passenger Track Alternative A and Shared Passenger Track Alternative B.

Table 6-1 provides the estimate for the Shared Passenger Track Alternatives. These costs are as reported in the PEPD Record Set Capital Cost Estimate Report (refer to Appendix 6-B).[3]

Table 6-1 Capital Cost of the Shared Passenger Track Alternatives (2023$ in millions)

FRA Standard Cost Categories[1]	Shared Passenger Track Alternatives A and B[2]
10 Track Structures and Track	$1,025
20 Stations, Terminals, Intermodal	$138
30 Support Facilities: Yards, Shops	$1,075
40 Sitework and Special Conditions	$1,230

[2] "Buy America" requirements apply to mass transit projects and give preference to the use of domestically produced materials on any procurements funded at least in part by federal funds. Administered by the Federal Transit Administration, the requirements are described at 49 Code of Federal Regulations Part 661.

[3] The capital costs presented in this EIR/EIS reflect the capital costs that were developed for the 2023 Supplemental Alternatives Analysis that was approved by the Authority Board in May 2024. The Authority is preparing updated capital costs, to be published with the 2026 Business Plan in early 2026.

FRA Standard Cost Categories[1]	Shared Passenger Track Alternatives A and B[2]
50 Systems	$375
60 Right-of-Way, Land, Existing Improvements[1]	$1,744
70 Vehicles	Considered a systemwide cost and not included as part of the Shared Passenger Track Alternatives
80 Professional Services	$755
90 Unallocated contingency[2]	$252
100 Finance Charges	Estimate to be developed prior to construction
Total[3]	**$6,593**
Early Action Project Total Costs	$3,014
Total with Early Action Project Costs Removed	$3,579

Source: Appendix 6-B
[1] The FRA's Standard Cost Categories do not include items specifically excluded such as allowances for agreements or right-of-way costs with the Los Angeles County Metropolitan Transportation Authority, or Orange County Transportation Authority for shared use in the Los Angeles to Anaheim Project Section. These agreements would be required and would have an associated fee.
[2] Costs are in Quarter 4 2023$ (rounded to the nearest $million), except for Cost Category 30. The project cost includes an estimate for savings that could be reasonably accrued from standard value engineering review. The savings estimate is based on actual Authority engineering design review of the Los Angeles to Anaheim Project Section. More detail on the type of refinements considered as value engineering is found in the Preliminary Engineering for Project Definition General Notes.
[3] Although the Authority anticipates the funding for early action projects to come in part, and potentially in whole, from other agencies and entities, this cost estimate reflects combined spending anticipated by the Authority and others. Costs do not include optional intermediate high-speed rail station facilities at Norwalk/Santa Fe Springs or Fullerton. Totals may not add up because of rounding.
Authority = California High-Speed Rail Authority; FRA = Federal Railroad Administration

As detailed in the PEPD Record Set Capital Cost Estimate Report (refer to Appendix 6-B), the cost associated with construction of Shared Passenger Track Alternatives A and B is estimated at approximately $6,593 million for each alternative.

6.2.3 Maintenance Facilities

O&M of the HSR system would require the placement of maintenance facilities along the alignment. For systemwide operations, the HSR system would include four types of maintenance facilities: maintenance of infrastructure facilities, maintenance of infrastructure siding facilities, a heavy maintenance facility, and light maintenance facilities (LMF). These four types of maintenance facilities are described in Chapter 2, Alternatives, Section 2.4.9, Maintenance Facilities, of this Draft EIR/EIS. The California HSR System would require one heavy maintenance facility, in the Central Valley. HSR maintenance facilities would not be used for BNSF Railway (BNSF) trains.

The Los Angeles to Anaheim Project Section Shared Passenger Track Alternatives include an alternative with the LMF at 26th Street (Shared Passenger Track Alternative A) and an alternative with the LMF at 15th Street (Shared Passenger Track Alternative B). A description of the alternatives and their locations can be found in Chapter 2, specifically Section 2.6.3.4, Light Maintenance Facility, and Section 2.6.4.4, Light Maintenance Facility. Only one LMF would be included in the project.

6.3 Operation and Maintenance Costs

Chapter 2 describes O&M activities for the Shared Passenger Track Alternatives in greater detail. This analysis assumes HSR service during Phase 1 would connect San Francisco with Los Angeles via the Central Valley by 2029. The plan is to offer express, limited-stop, and all-stop services, depending on time of day and projected needs. The Phase 1 system would serve at least 13 HSR stations. For the project section, Los Angeles Union Station and Anaheim Regional Transportation Intermodal Center would serve as termini HSR stations. Norwalk/Santa Fe Springs and Fullerton have been identified as locations for an intermediate station option that

could be added on further consideration and would also support HSR operations within the project section. By 2040, multiple facilities would be required for overnight storage, inspection, and routine maintenance of over 78 trainsets, each 656 feet long. The heavy maintenance facility serving the entire HSR system would be between Merced and Bakersfield. The heavy maintenance facility would store and maintain a portion of the trainsets. A maintenance of infrastructure facility would be located approximately every 150 miles, and a maintenance of infrastructure siding facility would be needed approximately every 75 miles.

O&M costs account for staff, labor, and materials supplies required to run the HSR system and to perform required maintenance. O&M costs are estimated based on daily rail miles, operating speeds, HSR station configurations, maintenance and storage facilities, and assumed operating frequencies in accordance with the 2023 Project Update Report (Authority 2023).

6.3.1 Assumptions

The O&M cost forecasts for the Shared Passenger Track Alternatives are based on assumptions from the *High-Speed Rail Operating and Maintenance Cost Model Documentation* (refer to Appendix 6-A). The Authority developed other assumptions based on refinements to the HSR plan over time and aspects specific to the project section. Assumptions used in the analysis include the following:

- The apportionment of systemwide O&M cost estimates to the project section is proportional to the cost per route mile in the project section.
- The Phase 1 system would open in 2030 and cover approximately 500 miles.
- The Phase 1 system would serve 13 stations: San Francisco, Millbrae, San Jose, Gilroy, Madera, Merced, Fresno, Kings/Tulare, Bakersfield, Palmdale, Burbank, Los Angeles Union Station, and Anaheim Regional Transportation Intermodal Center; with additional stations (e.g., Norwalk/Santa Fe Springs or Fullerton) under consideration.
- The Phase 1 system would include 196 revenue service train runs per day with varying stopping patterns between San Francisco and Anaheim, San Francisco and Los Angeles, San Jose and Los Angeles, Merced and Los Angeles, and Merced and Anaheim.
- The Phase 1 system assumes 6 hours of peak service and 10 hours of off-peak service daily. Phase 1 will include eight round-trip revenue service trains per hour during peak service and five round-trip trains per hour during off-peak service. For the project section, operation of up to two trains per hour per direction during peak service is assumed.
- The HSR system would include connecting bus service between Sacramento and Merced during Phase 1 operations.
- After full operational ramp-up, HSR operations would include 78 trainsets including spares, 34.5 million total trainset miles, and 2.2 million bus miles per year.

To support Phase 1 HSR service outlined above, total O&M costs include additional assumptions related to maintenance and train operations. The system would include one operations control center and three terminal control facilities to manage dispatching. A heavy maintenance facility would be in the Central Valley, with two LMFs dispersed across the rest of the system, including one in Northern California along the Peninsula Corridor at Brisbane, and one in the project section in Southern California at either 26th Street in Vernon or 15th Street in Los Angeles. O&M support activities would also be provided at maintenance of infrastructure facilities.

6.3.2 Operating Speeds

The HSR system would operate at high speeds (up to 220 miles per hour) along fully grade-separated, dedicated track, and at lower speeds in some areas with blended operations. Operating speeds in the project section would not exceed 90 miles per hour because of blended operations. Along certain curves throughout the project alignment, the maximum speed may be lower, and as low as 45 miles per hour. Between Los Angeles Union Station and Redondo

Junction, the maximum speed at certain curves would be 60 miles per hour, between Redondo Junction and Fullerton Junction the maximum speed at certain curves would be 80 miles per hour, and between Fullerton Junction and Anaheim Regional Transportation Intermodal Center the maximum speed would be 90 miles per hour.

6.3.3 Development of Operational and Maintenance Costs

An important goal of the Authority's Business Plan is to achieve a balance between O&M costs and projected farebox revenue as proof of the requirements mandated by Proposition 1A, the Safe, Reliable High-Speed Passenger Train Bond Act, adopted by California voters in November 2008. The Authority has continued to refine its O&M cost model to reflect a more accurate cost basis for the program's current level of design.

O&M cost estimates include operational activities needed to serve and carry the forecast train service for Phase 1 in 2040 for the medium and high ridership scenarios as described in Chapter 2, the maintenance costs necessary to keep the system in a state of good repair, and the administrative costs (Appendix 6-A). For consistency with the environmental impacts analysis, the estimated O&M cost estimates in this chapter are based on the Authority's 2023 Project Update Report (Authority 2023). The current HSR O&M model, where applicable, is based on cost categories defined in the U.S. Department of Transportation Inspector General's *High-Speed Intercity Passenger Rail Program Best Practices: Operating Costs Estimation* (Office of the Inspector General 2011), where applicable. The report defines the general parameters for estimating the preliminary, intermediate, final, and commercial closeout stages of a program. No program falls neatly into all these parameters, and there is usually some overlap between the stages. In this context, large parts of the Authority's O&M cost model fall into the intermediate stage, and others might be classified as preliminary or have advanced to the final stage.

Unit prices were developed and applied to calculate the cost for each activity included in the operating plan. Although many of the O&M unit costs for the HSR system would be similar to the costs of U.S. conventional rail operations and can be reliably estimated from U.S. practices and costs, the unit cost to maintain high-speed trainsets and dedicated HSR infrastructure has no close analogy in the U.S. Therefore, international O&M unit cost projections from comparable HSR operations were applied to planned California operations, HSR technology, and local cost levels and labor practices.

The O&M costs of HSR equipment include the cost of (1) crew, administration, and supplies to operate and dispatch the HSR services; (2) electric power for traction, onboard systems, stations, and maintenance/other facilities; and (3) cleaning, inspection, maintenance, and overhaul of the trainsets. Maintenance of infrastructure covers the costs of patrolling, inspecting, and maintaining the right-of-way, fencing, structures, bridges, tunnels, roadbed, track, signaling, overhead electric traction power system, substations and similar electrical facilities, communications, intrusion detection, and other facilities.

Station O&M costs include day-to-day operations of the station, ticket sales and machine maintenance, public safety, passenger handling, and cleaning. Station staffing is based on the number of train turns at each terminal station and station size. Station staffing assumes the following job categories.

- Station manager
- Ticket clerk/customer service representative
- Sworn and unsworn security
- Station and train cleaning
- Frontline supervisors

Phase 1 HSR system operations would require potentially 25 individuals at Norwalk/Santa Fe Springs Station or 25 individuals at Fullerton Station and 85 individuals at Anaheim Regional Transportation Intermodal Center. The O&M cost model includes the following categories of O&M costs:

- Train operations
- Dispatching
- Maintenance of equipment
- Maintenance of infrastructure
- Station and train cleaning
- Commercial
- General and administrative activities
- Insurance
- Unallocated contingencies

The upgrades made to the 2016 O&M model have improved the detail and flexibility of the model to allow for more precise estimating and easier validation of source material.

Table 6-2 outlines the medium ridership forecast O&M costs by cost category estimated for Phase 1 of the California HSR System for the year 2040. For more information on O&M forecasting, please refer to Appendix 6-A.

Table 6-2 Annual Operational and Maintenance Costs for Phase 1 (2015$ in millions)

Operations and Maintenance Activity	2040 Medium Ridership Forecast
Train operations	$285
Dispatching	$30
Maintenance of equipment	$134
Maintenance of infrastructure	$122
Station and train cleaning	$71
Commercial	$94
General and administrative	$53
Insurance	$52
Unallocated contingency	$35
Total	**$874**

Source: Appendix 6-A (Authority 2017)
Totals may not add up because of rounding.

O&M costs in 2015 dollars[4] as apportioned to the project section are listed in Table 6-3 and are based on the Phase 1 HSR system, total cost per route mile for the medium-cost scenario. The costs associated with O&M are apportioned on the basis of trainset miles operating in the project section, taken from a systemwide total. The costs associated with the maintenance of infrastructure facilities are apportioned to each geographic project section as a rate of 31 miles to the 520 Phase 1 total route miles. The O&M cost estimate for the project section is consistent with assumptions used for other project sections in the HSR program. O&M costs were not recalculated to support the 2023 Project Update Report; therefore, O&M costs are reported from

[4] O&M costs are reported from the 2022 Business Plan, which relies on data specific to the Los Angeles to Anaheim Project Section found in the 2016 Business Plan. O&M costs were not recalculated to support the 2023 Project Update or the 2024 Business Plan and no separate O&M estimates were developed for the project section in these reports.

the 2022 Business Plan. O&M costs were not recalculated for the 2024 Business Plan and the 2024 Business Plan does not individually calculate O&M for the project section. The cost model used for Appendix 6-A does not attempt to optimize operations to reduce costs but provides an achievable operating scenario that could be further improved on by a private operator and could be subject to change by the operator using more current assumptions. For planning, engineering, and design purposes, the approximately 500-mile Phase 1 HSR system has been divided into nine geographic project sections.

Accordingly, the project section is expected to cost $54.12 million annually under the 2040 medium ridership forecast (Appendix 6-A).

Table 6-3 Annual Operational and Maintenance Costs, Apportioned to the Los Angeles to Anaheim Project Section (2015$ in millions)

Operations and Maintenance Activity	2040 Medium Ridership Forecast
Train operations	$17.61
Dispatching	$1.85
Maintenance of equipment	$8.28
Maintenance of infrastructure	$7.54
Station and train cleaning	$4.39
Commercial	$5.81
General and administrative	$3.27
Insurance	$3.21
Unallocated contingency	$2.16
Total	**$54.12**

Source: Appendix 6-A (Authority 2017)
The 2040 medium cost is based on a rate of $1.75 million per mile.
Totals may not add up because of rounding.