

DRAFT – Advisory, Consultative, Deliberative

2040 Roosevelt Boulevard Route for Change Project

Order of Magnitude Capital Cost Methodology Report

December 2024

Prepared by:

HNTB

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Introduction & Project Background

The following report outlines the methodology used to develop the Order of Magnitude Capital Costs estimates for the 2040 Roosevelt Boulevard Route for Change Project (Project). The Pennsylvania Department of Transportation (PennDOT)—in partnership and coordination with the Southeastern Pennsylvania Transportation Authority (SEPTA), the City of Philadelphia (City), the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA)—is undertaking a *Planning and Environmental Linkages Study* (the PEL Study) to address identified long-range transportation and safety-related needs along Roosevelt Boulevard within the City of Philadelphia. The PEL approach brings agencies together early to achieve shared understanding on the technical approach to addressing mobility needs and system gaps in advance of a subsequent National Environmental Policy Act (NEPA) process. Roosevelt Boulevard is on the City of Philadelphia’s High Injury Network and experiences persistently high rates of fatalities and serious injury crashes, recurring traffic congestion, and is characterized by poor conditions for transit throughput and safe connections for non-motorized system users.

The Project has two phases or tiers of analysis. The Tier 1 analysis focuses on evaluating and screening a long list of alternatives. The long list of candidate alternatives is being comparatively assessed with the aim of selecting a short list of alternatives for a more detailed analysis in Tier 2 of the Project. The long list of candidate alternatives has been developed to allow for a comparative analysis of anticipated benefits, development of order of magnitude capital cost and operations and maintenance cost estimates, transit ridership forecasts, and other preliminary elements that focus on estimating safety, mobility, and environmental impacts.

The long list of candidate alternatives draws from multiple prior studies and planning efforts—including the May 2021 *Roosevelt Boulevard Route for Change Study* (Route for Change Study) and the 2003 *Roosevelt Boulevard Corridor Transportation Investment Study* (2003 Study). Both analyses described the deteriorating performance of Roosevelt Boulevard and emphasize its multimodal transportation deficiencies. These previous analyses form the foundation of the PEL Study and represent the starting point for the analysis of transportation network gaps the Project intends to address.

The long list of alternatives includes six build alternatives, with the addition of four alternatives that include “add-on” transit components. Two of the build alternatives have been carried over from the Route for Change Study. The list of alternatives has been expanded to consider

additional transit mobility concepts considered in the 2003 Study and other efforts. The outcome of this process has produced six candidate alternatives that assume a roadway reconfiguration matched with a transit capital investment. For more detail on each of Alternatives, please refer to the Definition of Alternatives Report.

Table 1. Route for Change List of Alternatives

Alternative Number	Alternative Description
1A	Partially Capped Expressway with Light Rail Transit (LRT)
1B	Partially Capped Expressway with Bus Rapid Transit (BRT)
2A	Neighborhood Boulevard with LRT
2B	Neighborhood Boulevard with BRT
3	Partially Capped Expressway with Subway
4	Neighborhood Boulevard with Subway
3.2	Partially Capped Expressway with Subway and Underground Extension of Market-Frankford Line (MFL)
3.3	Partially Capped Expressway with Subway and Elevated Extension of MFL
4.2	Neighborhood Boulevard with Subway and Underground Extension of MFL
4.3	Neighborhood Boulevard with Subway and Elevated Extension of MFL

Purpose

The purpose of this document is to outline the methodology and assumptions used to prepare the Order of Magnitude Capital Cost Estimates for the Tier 1 alternatives, as defined in the Definition of Alternatives Report. These estimates represent high-level rough order-of-magnitude calculations based on numerous Project assumptions, elements, and unit prices. No design work has been performed for the Tier 1 alternatives at this project phase.

Estimating Methodology

The following sections describe the process used to develop the quantities and unit costs for the roadway and transit elements for the Tier 1 alternatives for the 2040 Roosevelt Boulevard Route for Change Project.

Estimate Format

The Order of Magnitude Cost Estimate has been presented with Project cost totals in dollars for two analysis years: 2024 and 2040. Costs developed in 2024 dollars were escalated to 2040 dollars through the application of an annualized escalation of 3.5 percent. No construction schedule has been created in the Tier 1 phase of the Project, therefore the analysis year of 2040 is subject to change. The Order of Magnitude Capital Cost Estimates for the transit elements of the project will be presented consistent with FTA's Standard Cost Categories (SCC) during the Tier 2 phase of the Project.

Roadway Methodology

The Tier 1 analysis process considers two separate roadway configurations—a Partially Capped Expressway and a Neighborhood Boulevard. Key elements for each roadway configuration are described in the Definition of Alternatives Report and are identified below in Table 2 and Table 3.

Table 2. Partially Capped Expressway Key Elements

Partially Capped Expressway	Key Assumptions Applied in Capital Cost Estimation
Depressed Full Cap	<ul style="list-style-type: none"> ▪ Four 12-foot travel lanes, one 8-foot left shoulder, one 10-foot right shoulder. ▪ 2.5-foot top and bottom slab thickness. ▪ Includes excavation, backfill, temporary excavation support system, concrete, pavement courses, waterproofing, foundation drains, architecture surface treatments, coating for concrete surfaces, aggregate, median barrier, pavement markings, and impact attenuating devices.
Depressed Full Cap with Ramps	<ul style="list-style-type: none"> ▪ Six 12-foot travel lanes, one 8-foot left shoulder, one 10-foot right shoulder. ▪ 2.5-foot top and bottom slab thickness. ▪ Includes excavation, backfill, temporary excavation support system, concrete, pavement courses, waterproofing, foundation drains, architecture surface treatments, coating for concrete surfaces, aggregate, median barrier, pavement markings, and impact attenuating devices.
Partially Capped Expressway with At-Grade Crossing Intersections	<ul style="list-style-type: none"> ▪ Four 12-foot travel lanes, one 8-foot left shoulder, one 10-foot right shoulder. ▪ 2.5-foot top and bottom slab thickness. ▪ 1-foot deck thickness. ▪ Includes excavation, backfill, temporary excavation support system, concrete, pavement courses, waterproofing, foundation drains, architecture surface treatments, coating for concrete surfaces, aggregate, median barrier, pavement markings, and impact attenuating devices.
Depressed Partial Cap	<ul style="list-style-type: none"> ▪ Four 12-foot travel lanes, one 8-foot left shoulder, one 10-foot right shoulder. ▪ 2.5-foot bottom slab thickness. ▪ Includes excavation, backfill, temporary excavation support system, concrete, pavement courses, waterproofing, foundation drains, architecture surface treatments, coating for concrete surfaces, aggregate, median barrier, pavement markings, and impact attenuating devices.

Partially Capped Expressway	Key Assumptions Applied in Capital Cost Estimation
Depressed Partial Cap with Ramps	<ul style="list-style-type: none"> ▪ Six 12-foot travel lanes, one 8-foot left shoulder, one 10-foot right shoulder. ▪ 2.5-foot bottom slab thickness. ▪ Includes excavation, backfill, temporary excavation support system, concrete, pavement courses, waterproofing, foundation drains, architecture surface treatments, coating for concrete surfaces, aggregate, median barrier, pavement markings, and impact attenuating devices.
Travel Lanes (At-Grade)	<ul style="list-style-type: none"> ▪ Four 12-foot travel lanes. ▪ Includes excavation, geotextile, subbase, pavement courses, pavement base drain, concrete curb, pavement markings, guide rail, and end treatments.
Travel Lanes (Local Lanes)	<ul style="list-style-type: none"> ▪ Four 12-foot travel lanes. ▪ Includes excavation, geotextile, subbase, pavement courses, pavement base drain, concrete curb, pavement markings, guide rail, and end treatments.
Bike Lanes	<ul style="list-style-type: none"> ▪ Two 11-foot two-way bicycle tracks. ▪ Includes excavation, subbase, pavement courses, concrete curb, and green bicycle pavement markings.
Median Landscaping	<ul style="list-style-type: none"> ▪ Includes excavation, topsoil, and seeding.
Sidewalk	<ul style="list-style-type: none"> ▪ Includes excavation and concrete.
Drainage and Stormwater Management	<ul style="list-style-type: none"> ▪ Includes inlet boxes, inlet grates, 18" RCP pipe, RECP, and excavation.
Existing Signal Upgrades and Retiming	<ul style="list-style-type: none"> ▪ Includes the required upgrades and retiming necessary for the existing signalized intersections.
Utility Relocations	<ul style="list-style-type: none"> ▪ Includes the cost of utility relocations for the new roadway configuration.
Signage and Delineation	<ul style="list-style-type: none"> ▪ Includes the cost of roadway signage and roadway delineation for the new configuration.
Landscaping and Public Art	<ul style="list-style-type: none"> ▪ Includes the plantings required for the new roadway configuration, landscaping for public open spaces and public art.

Partially Capped Expressway	Key Assumptions Applied in Capital Cost Estimation
Roadway Lighting	<ul style="list-style-type: none"> ▪ Includes the required lighting for the new roadway configuration.

Table 3. Neighborhood Boulevard Key Elements

Neighborhood Boulevard	Key Assumptions Applied in Capital Cost Estimation
Travel Lanes (At-Grade)	<ul style="list-style-type: none"> ▪ Eight 12-foot travel lanes ▪ Includes excavation, subbase, pavement courses, pavement base drain, concrete curb, pavement base drains, pavement markings, guide rail and end treatments.
Bike Lanes	<ul style="list-style-type: none"> ▪ Two 11-foot two-way bicycle tracks ▪ Includes excavation, subbase, pavement courses, concrete curb, and green bicycle pavement markings.
Median Landscaping	<ul style="list-style-type: none"> ▪ Includes excavation, topsoil and seeding.
Sidewalk	<ul style="list-style-type: none"> ▪ Includes excavation and concrete.
Drainage and Stormwater Management	<ul style="list-style-type: none"> ▪ Includes inlet boxes and inlet grates, 18” RCP pipe, and excavation.
Existing Signal Upgrades and Retiming	<ul style="list-style-type: none"> ▪ Includes the required upgrades and retiming necessary for the existing signalized intersections.
Utility Relocations	<ul style="list-style-type: none"> ▪ Includes the cost of utility relocations for the new roadway configuration.
Signage and Delineation	<ul style="list-style-type: none"> ▪ Includes the cost of roadway signage and roadway delineation for the new configuration.
Landscaping and Public Art	<ul style="list-style-type: none"> ▪ Includes the plantings required for the new roadway configuration, landscaping for public open spaces and public art.
Roadway Lighting	<ul style="list-style-type: none"> ▪ Includes the required lighting for the new roadway configuration.

Roadway Cost Development

The key project elements for the roadway configurations are based on typical PennDOT materials along with specialty items infrequently included on projects throughout the Commonwealth of Pennsylvania. Unit costs for the PennDOT standard items and specialty items were developed based on recent bid prices and historical data obtained from PennDOT's Engineering and Construction Management System (ECMS). The unit costs include labor, equipment, and materials. Landscaping, signing, and roadway lighting are presented as lump sum items that are assumed as a percentage of the total roadway costs. Landscaping, signing, and roadway lighting will be further defined in future project phases.

Planning-level quantities were developed for each standard and specialty item based on the anticipated length of each Tier 1 alternative. Total costs for each item were developed by multiplying unit costs by quantities. Each cost estimate includes sources, assumptions, and unit costs.

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Transit Methodology

The Tier 1 analysis process considers three separate transit configurations: Light Rail Transit (LRT), Bus Rapid Transit (BRT) and Subway. Key elements for each transit configuration are described in the Definition of Alternatives Report and listed below in Table 4, Table 5, and Table 6. Cost assumptions for the Subway alternative are shown in Figure 1 below.

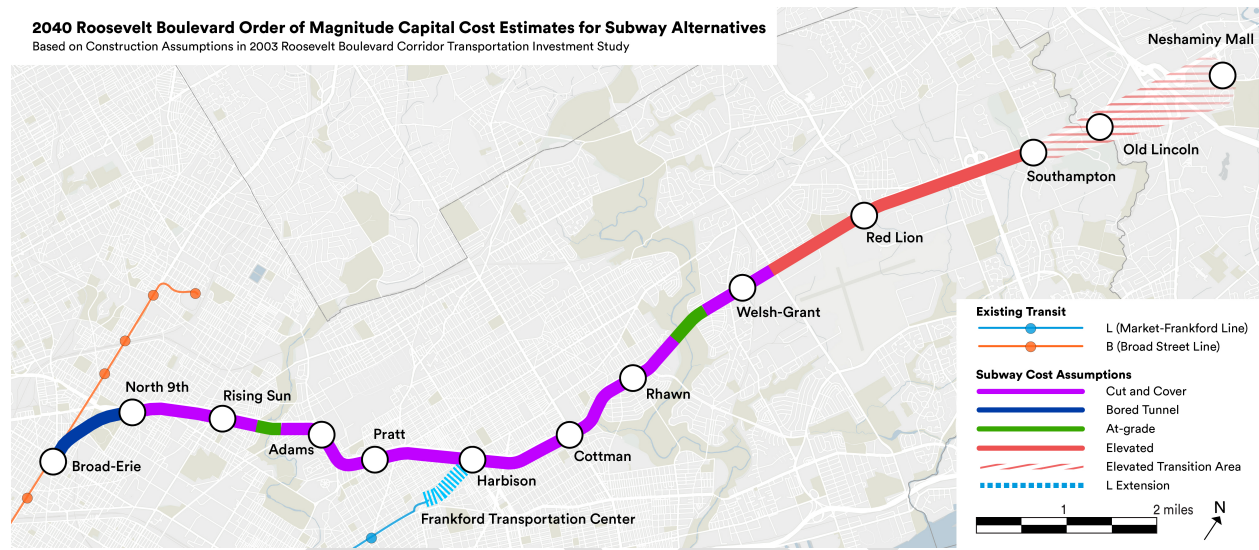


Figure 1. 2040 Roosevelt Boulevard Order of Magnitude Capital Cost Estimates for Subway Alternative

Table 4. LRT Key Elements

LRT Elements	Assumptions
Guideway - Aerial	<ul style="list-style-type: none"> Two Tracks (Inbound and Outbound). Includes foundation excavation, guideway structures including caissons, columns, bridges, viaducts, cross-overs, and fly-overs. Direct Fixation (DF) Track: includes rails and connectors.
Guideway – At-Grade in Mixed Traffic	<ul style="list-style-type: none"> Two Tracks (Inbound and Outbound). Embedded Track: includes rail, fasteners, concrete encasement, and steel ties.
Guideway – At-Grade Semi Exclusive	<ul style="list-style-type: none"> Two Tracks (Inbound and Outbound). Embedded Track: includes rail, fasteners, concrete encasement, and steel ties.
Special Work for Intersections & Yard	<ul style="list-style-type: none"> Fifteen Switches/ turnouts (TO) within the system. Five Switches / TO for yard.

LRT Elements	Assumptions
	<ul style="list-style-type: none"> Includes transitional curves and turnouts or interlockings within the system and yard.
Light Rail Vehicle (LRV) Yard Track	<ul style="list-style-type: none"> Eight 250' storage tracks. Includes yard construction, guideway and track associated with the yard.
At-Grade Stations	<ul style="list-style-type: none"> Includes station structures including caissons, columns, platforms, canopies, etc.
Aerial Stations	<ul style="list-style-type: none"> Includes station structures including caissons, columns, platforms, superstructures etc.
Maintenance Facility	<ul style="list-style-type: none"> Size and cost based on 69th Street Master Plan Project. Site for maintenance facility has not been selected but assumed to be close to the alignment. Does not include cost for Right-of-Way acquisition.
Transition Structures from At-Grade to Elevated	<ul style="list-style-type: none"> 350' transition from at-grade to aerial guideway.
Roadway Reconstruction for At-Grade LRT	<ul style="list-style-type: none"> Includes excavation, subbase, pavement courses, pavement base drain, concrete curb and pavement base drains.
Vehicles	<ul style="list-style-type: none"> Quantity assumes 31 peak vehicles and a spare ratio of 35%. Based on SEPTA's purchase of new LRVs under Trolley Modernization Program.
Overhead Contact Systems	<ul style="list-style-type: none"> Includes material and labor for new catenary system.
Signals	<ul style="list-style-type: none"> Includes material and labor for wayside signals.
Communications	<ul style="list-style-type: none"> Include passenger information systems at stations and on vehicles (real time travel information; static maps and schedules). Includes equipment to allow communications among vehicles and with central control.
Substations	<ul style="list-style-type: none"> Traction Power Supply. Includes material and labor associated with substations.
Mechanical/Electrical/Plumbing	<ul style="list-style-type: none"> Includes any costs associated with mechanical, electrical, and plumbing systems for the transit system.
Transit Lighting	<ul style="list-style-type: none"> Includes the required lighting for the transit system.
Station Signage	<ul style="list-style-type: none"> Includes costs and material for signage at stations.

Table 5. BRT Key Elements

BRT Elements	Assumptions
At-Grade BRT Dedicated Lane	<ul style="list-style-type: none"> Two, 12-foot Travel Lanes.

	<ul style="list-style-type: none"> Includes excavation, subbase, pavement courses, pavement base drain, concrete curb, and pavement markings.
Vehicles	<ul style="list-style-type: none"> Quantity based on 31 peak vehicles, and a 35% spare ratio.
Stations	<ul style="list-style-type: none"> Includes station structures including caissons, columns, platforms, canopies, etc.
Maintenance Facility	<ul style="list-style-type: none"> Size and cost based on 69th Street Master Plan Project. Site for maintenance facility has not been selected but assumed to be close to the alignment. Does not include cost for Right-of-Way acquisition.

Table 6 Subway Key Elements

Subway Elements	Assumptions
2 – Track, Bored Tunnel Subway	<ul style="list-style-type: none"> Includes tunneling by means of a tunnel boring machine, drill blasting, mining, and immersed tube tunneling; tunnel structure and finishes. Direct Fixation (DF) Track: Includes rails and connectors.
2 – Track, Cut and Cover Subway	<ul style="list-style-type: none"> Includes excavation, retaining walls, backfill, underground guideway structure and finishes. Direct Fixation (DF) Track: Includes rails and connectors.
2 – Track, Elevated Subway	<ul style="list-style-type: none"> Includes foundation excavation, guideway structure including caissons, columns, bridges, viaducts, crossovers, fly-overs. Direct Fixation (DF) Track: Includes rails and connectors. Right-of-Way (ROW) acquisition.
2 –Track, At Grade Subway	<ul style="list-style-type: none"> Direct Fixation (DF) Track: Includes rails and connectors. Security fencing.
Interlockings	<ul style="list-style-type: none"> Number 8 diamond cross-over (DXO) every 2.5 miles, this was the average of miles between each crossover move between BSS. Cost from cost estimate of new DXO for MFL Subway-Elevated Resignalization Project.
Broad Street Line (BSL) Terminal Yard Tracks	<ul style="list-style-type: none"> Based on Fern Rock Yard 800'/storage track, 10 tracks - this needs refinement of design & capacity, is subject to change. Includes yard construction, guideway and track associated with the yard.
Junction @ Erie BSL Subway Station	<ul style="list-style-type: none"> Assumes crossover at Erie Station of BSL off the Express Track.
Yard Turnouts	<ul style="list-style-type: none"> Number of turnouts from Fern Rock Yard tracks.

Subway Elements	Assumptions
Subgrade Stations	<ul style="list-style-type: none"> Includes retaining walls, backfill and structure. Fare Collection Systems.
Elevated Stations	<ul style="list-style-type: none"> Includes station structures including caissons, columns, platforms, superstructures, etc. Fare Collection Systems.
Maintenance Facility	<ul style="list-style-type: none"> Used 50 vehicles; subject to change based on how many vehicles we are storing & servicing at this facility. Includes heavy maintenance and overhaul facilities. Site for maintenance facility has not been selected but assumed to be close to the alignment. Does not include cost for Right-of-Way acquisition.
BSS Vehicles	<ul style="list-style-type: none"> Quantity based on 120 peak vehicles and 20% spare ratio. Based on price of SEPTA M5 procurement.
Market Frankford Line (MFL) Vehicles	<ul style="list-style-type: none"> Quantity based on 12 peak vehicles and 20% spare ratio for the extension to MFL. Based on price of SEPTA M5 procurement.
Signals	<ul style="list-style-type: none"> Includes material and labor for wayside signals.
Communications	<ul style="list-style-type: none"> Include passenger information systems at stations and on vehicles (real time travel information, static maps and schedules). Includes equipment to allow communications among vehicles and with central control.
Traction Power System	<ul style="list-style-type: none"> Includes materials and labor costs associated with a third rail system.
Substations	<ul style="list-style-type: none"> Traction power supply. Includes material and labor associated with substations.
Mechanical/Electrical/Plumbing	<ul style="list-style-type: none"> Includes any costs associated with mechanical, electrical, and plumbing systems for the transit system. Includes ventilation.
Transit Lighting	<ul style="list-style-type: none"> Includes the required lighting for the transit system.
Station Signage	<ul style="list-style-type: none"> Includes costs and material for signage at stations.

Transit Cost Development

Specific transit cost elements are based on FTA’s Capital Cost Database. The FTA Capital Cost Database is comprised of observed costs for 65 projects that received federal funding, including federally funded bus rapid transit, commuter rail, light rail, heavy rail, and trolley projects. Of those 65 projects, the development of costs for the Roosevelt Boulevard Tier 1 alternatives were further examined by projects that reside in their Mid-Atlantic and Northeastern United States.

Specific cost estimates for the LRT alternative are based on the following projects:

- Charlotte South Light Rail Line, At-Grade, 2007
- Hudson-Bergen MOS-1, At-Grade, 2002
- New Jersey - Southern New Jersey Light Rail Transit System, At-Grade, 2003
- Newark Broad Street Light Rail Line, At-Grade, 2006
- Pittsburgh - Light Rail Stage I, At-Grade, 1987
- Pittsburgh - Light Rail Stage II, Aerial, 2004
- Pittsburgh - North Shore LRT Connector, Underground, 2012
- The Tide Light Rail Project, At-Grade, 2011

Specific cost estimates for the Subway alternative are based on the following projects:

- Atlanta MARTA – Red Line Dunwoody Extension, Underground, 2000
- Atlanta MARTA – North-South Line, At-Grade, 1987
- Baltimore MDMTA - Metro Sections A and B, Underground, 1983
- Boston MBTA - Orange Line, Aerial, 1987
- Miami Dade – Metrorail, Aerial, 1985
- Philadelphia SEPTA - Frankford Rehabilitation, Aerial, 2005
- Washington, D.C. - Anacostia Outer (F), Aerial, 2001
- Washington, D.C. - Glenmont Outer (B), Underground, 1998
- Washington, D.C. - Greenbelt Mid (E), Underground, 1999

Specific cost estimates for the BRT alternatives are based on the following projects:

- Boston MBTA – South Boston Piers, 2004
- Cleveland – Euclid Avenue BRT, 2008
- New Britain – Hartford Busway, 2015
- Pittsburgh – Airport Busway, 2000

Three project elements are provided as estimates of lump sum costs due to the level of concept design consistent with this Tier 1 project phase. Mechanical, Electric, and Plumbing

(MEP), Transit Lighting, and Station Signage are provided as lump sum costs. They will be further defined in future project phases. MEP and Transit Lighting are represented as a percentage of the overall transit capital costs. Station Signage is represented as a percent of the station costs for each of the transit configurations.

Planning-level quantities were developed for each standard and specialty item based on the anticipated length of each Tier 1 alternative. Total costs for each item were developed by multiplying the unit cost by quantities. Each cost estimate includes sources, assumptions, and unit costs.

Project-Wide Lump Sum Items

Erosion and sediment control, maintenance and protection of traffic, mobilization, and clearing and grubbing are all items that are calculated based off the total project costs. Each project subtotal was developed by adding the roadway subtotal to the transit subtotal. These items were identified to be lump sum items due to the complexity and variability of the scope of work for those specific items.

The cost of erosion and sediment control is assumed to be 5.00% of the total project subtotal. This cost may include silt fences, inlet protections, filter socks, rolled erosion control products, and any additional measures the contractor may need to adequately control the sediment runoff during construction.

The cost of Maintenance and Protection of traffic is assumed to be 5.00% of the project subtotal. Construction for this project is assumed to be for the entire width of the existing corridor (from curb to curb). This cost may include concrete barrier, temporary guide rail, arrow panels, signage, changeable messages signs, and additional traffic control devices the contractor may need to adequately and safely construct the proposed improvements. Due to the early stages of this project, consideration has not been given to the phasing or staging of work during construction.

The cost of mobilization is assumed to be 5.00% of the project subtotal. This cost may include contractor overhead, project overhead, sub-contractor markup, contract bond, profit, and any other cost the contractor might incur to transfer equipment and resources to the project. Due to the early stages of this project, consideration has not been given to any specialized equipment, working season and frequency of remobilization.

The cost of clearing and grubbing is assumed to be 2.00% of the total project subtotal. This cost includes the work that needs to occur to remove and dispose of all vegetation, trash, natural and manmade objects that need to be removed for within the construction zone.

These project-wide lump sum items will be reviewed and updated as the alternatives and scope of work become more defined as the project advances through the preliminary planning stages.

Soft Costs

Soft cost add-ons are included to represent the costs of engineering, project and construction management and administration, insurance, permits and fees, training/startup/testing, and any force account work. These add-on costs are calculated as a percentage of the project subtotal, including the cost of erosion and sediment control, maintenance and protection of traffic, mobilization, and clearing and grubbing. The percentages are applied individually and not cumulatively. Due to the variability in length, cost, and transit mode, the soft costs vary between the different Tier 1 alternatives. Table 7 below identifies the soft cost percentages.

Preliminary Engineering is defined as the cost of early design, interagency coordination, and agreements, environmental clearance, development of financial plans, and ridership studies. Final Design includes the cost of the development of final construction plans. Project Management and Construction Administration includes the cost to support design, construction management, and administrative efforts for legal, technical, and environmental consultants. Insurance includes the cost of project insurance to cover professionals' liability insurance, owner-provided builder's risk, and other agency insurance. This cost does not include contractors' liability insurance or general insurance. The Other percentage includes the cost for legal, permit, survey, testing, investigation, and other start-up costs.

Table 7. Soft Cost Percentages

Alternative	Soft Cost Category	Soft Cost Percentage
1A and 2A	Preliminary Engineering	2.25%
	Final Design	13.00%
	Project Management and Construction Administration	13.50%
	Insurance	2.25%
	Other	1.00%
1B and 2B	Preliminary Engineering	2.00%
	Final Design	11.50%
	Project Management and Construction Administration	12.00%
	Insurance	2.00%
	Other	1.00%
3 and 4	Preliminary Engineering	8.25%
	Final Design	12.75%
	Project Management and Construction Administration	13.25%
	Insurance	2.00%
	Other	1.00%

Contingency

Contingency funds are typically meant to cover a variety of possible events and problems that have not yet been specifically identified and to account for a lack of project definition during the preparation of the construction cost estimate throughout project development. A **40% contingency** has been applied to the entire project subtotal.

Exclusions

The following has not been included in the Order of Magnitude Capital Cost Estimate:

- Operation and Maintenance Cost
- Charging Stations for bus vehicle fleet

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APPENDIX A: ORDER OF MAGNITUDE CAPITAL COST ESTIMATES

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Project Information	
Project Name	Roosevelt Blvd 2040 Cost Estimates
Job No.	74882

Roosevelt Boulevard 2040 Order of Magnitude Cost Estimate Summary

SUMMARY		
ALTERNATIVE DESCRIPTION	TOTAL COST (2024) (\$ in millions)	TOTAL COST (2040) (\$ in millions)
Alternative 1A (Partially Capped Expressway with LRT)	\$9,662	\$16,753
Alternative 1B (Partially Capped Expressway with BRT)	\$5,825	\$10,100
Alternative 2A (Neighborhood Boulevard with LRT)	\$5,603	\$9,716
Alternative 2B (Neighborhood Boulevard with BRT)	\$1,874	\$3,255
Alternative 3 (Partially Capped Expressway with Subway)	\$15,820	\$27,432
Alternative 3.2 (Partially Capped Expressway with Subway, Underground Extension to MFL)	\$16,353	\$28,355
Alternative 3.3 (Partially Capped Expressway with Subway, Elevated Extension to MFL)	\$16,219	\$28,123
Alternative 4 (Neighborhood Boulevard with Subway)	\$11,631	\$20,168
Alternative 4.2 (Neighborhood Boulevard with Subway, Underground Extension to MFL)	\$12,164	\$21,091
Alternative 4.3 (Neighborhood Boulevard with Subway, Elevated Extension to MFL)	\$12,030	\$20,860

Notes:

- Total Length of Roadway Improvements = 11.6 Miles
 - Old York Road to Southampton Road
- Total Length of Subway Improvements = 14.7 Miles
 - Broad and Erie to Neshaminy Mall
- Total Length of BRT Improvements = 18.7 Miles
 - Wissahickon Transportation Center to Neshaminy Mall
- Total Length of LRT and BRT Improvements = 18.5 Miles
 - Wissahickon Transportation Center to Neshaminy Mall
- Inflation Rate = 3.5%
- See Definition of Alternatives Report for roadway and transit segmentation.
- ESTIMATE VARIABILITY: The costs shown in this estimate represent an estimate of probable costs prepared in good faith and with reasonable care. HNTB has no control over the costs of construction labor, materials, or equipment, nor over competitive bidding or negotiating methods and does not make any commitment or assume any duty to assure that bids or negotiated prices will not vary from this estimate.

Project Information	
Project Name	Roosevelt Blvd 2040 Cost Estimates
Job No.	74882

Roosevelt Blvd Alt 1A Cost Estimate

Partially Capped Expressway with LRT

IMPROVEMENT DESCRIPTION	ROADWAY			TOTAL COST (2024)	TOTAL COST (2040)
	UOM	QUANTITY			
Depressed Full Cap	LF	20,427	\$	800,476,406.68	\$ 1,388,014,914.39
Depressed Full Cap with Ramps	LF	4,779	\$	369,757,804.17	\$ 641,154,870.55
Depressed Partially Capped with At-Grade Intersections	LF	2,122	\$	158,888,662.84	\$ 275,510,723.24
Depressed Partial Cap	LF	11,455	\$	403,187,126.68	\$ 699,120,849.10
Depressed Partial Cap with Ramps	LF	4,779	\$	176,980,361.47	\$ 306,881,476.11
Travel Lanes (Local Lanes)	LF	61,429	\$	88,737,963.45	\$ 153,870,389.83
Travel Lanes (At Grade)	LF	19,989	\$	28,875,590.21	\$ 50,069,870.32
Sidewalk	LF	61,429	\$	62,111,686.00	\$ 107,700,796.43
Bike Lanes	LF	61,429	\$	37,774,507.30	\$ 65,500,468.32
Median Landscaping	LF	27,329	\$	6,788,126.16	\$ 11,770,516.00
Drainage and Stormwater Management	LF	61,429	\$	190,597,093.54	\$ 330,492,699.43
Existing Signal Upgrades and Retimings	EACH	54	\$	27,000,000.00	\$ 46,817,623.08
Utility Relocations	LF	61,429	\$	99,638,065.08	\$ 172,771,013.88
Signing/Delineation	LS	1.5%	\$	36,762,200.90	\$ 63,745,143.16
Landscaping and Public Art	LS	2.0%	\$	49,016,267.87	\$ 84,993,524.21
Roadway Lighting	LS	2.0%	\$	49,016,267.87	\$ 84,993,524.21
ROADWAY SUBTOTAL				\$ 2,585,608,130.23	\$ 4,483,408,402.29

IMPROVEMENT DESCRIPTION	TRANSIT			TOTAL COST (2024)	TOTAL COST (2040)
	UOM	QUANTITY			
Guideway - Aerial	LF	29,570	\$	644,064,170.00	\$ 1,116,798,279.53
Guideway - At-Grade in Mixed Traffic	LF	28,387	\$	245,150,132.00	\$ 425,086,906.55
Guideway - At-Grade Semi Exclusive	LF	39,635	\$	397,301,240.00	\$ 688,914,803.77
Special Work for Intersections & Yard (TO & Switches)	TF	15	\$	3,375,000.00	\$ 5,852,202.88
LRV Yard Track	TF	2,000	\$	252,000.00	\$ 436,964.48
LRV Yard Track Turnouts	EA	5	\$	860,000.00	\$ 1,491,227.99
At-Grade Stations	EA	18	\$	97,080,714.00	\$ 168,336,602.81
Aerial Stations	EA	4	\$	38,639,376.00	\$ 67,000,138.57
Maintenance Facility	SF	30,000	\$	30,000,000.00	\$ 52,019,581.19
Transition Structures from At-Grade to Elevated	EA	1	\$	826,000.00	\$ 1,432,272.47
Roadway Reconstruction for At grade LRT	LF	28,387	\$	19,092,785.75	\$ 33,106,623.96
Vehicles	VEH	42	\$	331,072,140.00	\$ 574,074,468.94
MEP	LS	2.0%	\$	29,532,828.36	\$ 51,209,512.08
Transit Lighting	LS	3.0%	\$	44,299,242.53	\$ 76,814,268.13
Station Signage	LS	1.0%	\$	1,357,200.90	\$ 2,353,367.41
TRANSIT SUBTOTAL				\$ 1,882,902,829.54	\$ 3,264,927,220.78

- Notes:
- Total Length of Roadway Improvements = 11.6 Miles
 - Old York Road to Southampton Road
 - Total Length of LRT Improvements = 18.5 Miles
 - Wissahickon Transportation Center to Neshaminy Mall
 - Includes cost for Trackless Trolley Modifications at Frankford Transportation Center
 - Inflation Rate = 3.5%
 - See Definition of Alternatives Report for roadway and transit segmentation.
 - ESTIMATE VARIABILITY: The costs shown in this estimate represent an estimate of probable costs prepared in good faith and with reasonable care. HNTB has no control over the costs of construction labor, materials, or equipment, nor over competitive bidding or negotiating methods and does not make any commitment or assume any duty to assure that bids or negotiated prices will not vary from this estimate.

PROJECT SUBTOTAL		\$ 4,468,510,959.78	\$ 7,748,335,623.07
Erosion & Sediment Control	5.00%	\$ 223,425,547.99	\$ 387,416,781.15
Maintenance and Protection of Traffic	5.00%	\$ 223,425,547.99	\$ 387,416,781.15
Mobilization	5.00%	\$ 223,425,547.99	\$ 387,416,781.15
Clearing and Grubbing	2.00%	\$ 89,370,219.20	\$ 154,966,712.46
SUBTOTAL		\$ 5,228,157,822.94	\$ 9,065,552,678.99
Preliminary Engineering	2.25%	\$ 117,633,551.02	\$ 203,974,935.28
Final Design	13.00%	\$ 679,660,516.98	\$ 1,178,521,848.27
PM/CA	13.50%	\$ 705,801,306.10	\$ 1,223,849,611.66
Insurance	2.25%	\$ 117,633,551.02	\$ 203,974,935.28
Other	1.00%	\$ 52,281,578.23	\$ 90,655,526.79
SUBTOTAL		\$ 6,901,168,326.28	\$ 11,966,529,536.27
Contingency	40.00%	\$ 2,760,467,330.51	\$ 4,786,611,814.51
TOTAL PROJECT COST		\$ 9,661,635,656.79	\$ 16,753,141,350.78

Project Information	
Project Name	Roosevelt Blvd 2040 Cost Estimates
Job No.	74882

Roosevelt Blvd Alt 1B Cost Estimate

Partially Capped Expressway with BRT

IMPROVEMENT DESCRIPTION	ROADWAY		TOTAL COST (2024)	TOTAL COST (2040)
	UOM	QUANTITY		
Depressed Full Cap	LF	20,427	\$ 800,476,406.68	\$ 1,388,014,914.39
Depressed Full Cap with Ramps	LF	4,779	\$ 369,757,804.17	\$ 641,154,870.55
Depressed Partially Capped with At-Grade Intersections	LF	2,122	\$ 158,888,662.84	\$ 275,510,723.24
Depressed Partial Cap	LF	11,455	\$ 403,187,126.68	\$ 699,120,849.10
Depressed Partial Cap with Ramps	LF	4,779	\$ 176,980,361.47	\$ 306,881,476.11
Travel Lanes (Local Lanes)	LF	61,429	\$ 88,737,963.45	\$ 153,870,389.83
Travel Lanes (At Grade)	LF	19,989	\$ 28,875,590.21	\$ 50,069,870.32
Sidewalk	LF	61,429	\$ 62,111,686.00	\$ 107,700,796.43
Bike Lanes	LF	61,429	\$ 37,774,507.30	\$ 65,500,468.32
Median Landscaping	LF	27,329	\$ 6,788,126.16	\$ 11,770,516.00
Drainage and Stormwater Management	LF	61,429	\$ 190,597,093.54	\$ 330,492,699.43
Existing Signal Upgrades and Retimings	EACH	54	\$ 27,000,000.00	\$ 46,817,623.08
Utility Relocations	LF	61,429	\$ 99,638,065.08	\$ 172,771,013.88
Signing/Delineation	LS	1.5%	\$ 36,762,200.90	\$ 63,745,143.16
Landscaping and Public Art	LS	2.0%	\$ 49,016,267.87	\$ 84,993,524.21
Roadway Lighting	LS	2.0%	\$ 49,016,267.87	\$ 84,993,524.21
ROADWAY SUBTOTAL			\$ 2,585,608,130.23	\$ 4,483,408,402.29

IMPROVEMENT DESCRIPTION	TRANSIT		TOTAL COST (2024)	TOTAL COST (2040)
	UOM	QUANTITY		
At Grade BRT Dedicated Lane	LF	56,339	\$ 54,430,745.32	\$ 94,382,152.53
Stations	EA	22	\$ 31,761,664.00	\$ 55,074,281.98
Maintenance Facility	SF	40,000	\$ 32,000,000.00	\$ 55,487,553.27
Vehicles	VEH	42	\$ 57,318,324.00	\$ 99,389,173.64
MEP	LS	2.0%	\$ 2,363,848.19	\$ 4,098,879.76
Transit Lighting	LS	3.0%	\$ 3,545,772.28	\$ 6,148,319.63
Station Signage	LS	1.0%	\$ 317,616.64	\$ 550,742.82
TRANSIT SUBTOTAL			\$ 181,737,970.43	\$ 315,131,103.63

Notes:

- Total Length of Roadway Improvements = 11.6 Miles
 - Old York Road to Southampton Road
- Total Length of BRT Improvements = 18.7 Miles
 - Wissahickon Transportation Center to Neshaminy Mall
- Inflation Rate = 3.5%
- See Definition of Alternatives Report for roadway and transit segmentation.
- ESTIMATE VARIABILITY:** The costs shown in this estimate represent an estimate of probable costs prepared in good faith and with reasonable care. HNTB has no control over the costs of construction labor, materials, or equipment, nor over competitive bidding or negotiating methods and does not make any commitment or assume any duty to assure that bids or negotiated prices will not vary from this estimate.

PROJECT SUBTOTAL		\$ 2,767,346,100.66	\$ 4,798,539,505.93
Erosion & Sediment Control	5.00%	\$ 138,367,305.03	\$ 239,926,975.30
Maintenance and Protection of Traffic	5.00%	\$ 138,367,305.03	\$ 239,926,975.30
Mobilization	5.00%	\$ 138,367,305.03	\$ 239,926,975.30
Clearing and Grubbing	2.00%	\$ 55,346,922.01	\$ 95,970,790.12
SUBTOTAL		\$ 3,237,794,937.78	\$ 5,614,291,221.93
Preliminary Engineering	2.00%	\$ 64,755,898.76	\$ 112,285,824.44
Final Design	11.50%	\$ 372,346,417.84	\$ 645,643,490.52
PM/CA	12.00%	\$ 388,535,392.53	\$ 673,714,946.63
Insurance	2.00%	\$ 64,755,898.76	\$ 112,285,824.44
Other	1.00%	\$ 32,377,949.38	\$ 56,142,912.22
SUBTOTAL		\$ 4,160,566,495.04	\$ 7,214,364,220.18
Contingency	40.00%	\$ 1,664,226,598.02	\$ 2,885,745,688.07
TOTAL PROJECT COST		\$ 5,824,793,093.06	\$ 10,100,109,908.26

Project Information	
Project Name	Roosevelt Blvd 2040 Cost Estimates
Job No.	74882

Roosevelt Blvd Alt 2A Cost Estimate

Neighborhood Blvd with LRT

ROADWAY					
IMPROVEMENT DESCRIPTION	UOM	QUANTITY	TOTAL COST (2024)		TOTAL COST (2040)
Travel Lanes	LF	61,429	\$	176,296,487.42	\$ 305,695,648.06
New Intersection Signalization	EACH	29	\$	14,500,000.00	\$ 25,142,797.58
Sidewalk	LF	61,429	\$	57,970,906.93	\$ 100,520,743.34
Bike Lanes	LF	61,429	\$	37,774,507.30	\$ 65,500,468.32
Median Landscaping	LF	61,429	\$	11,495,925.10	\$ 19,933,773.63
Drainage and Stormwater Management	LF	61,429	\$	259,952,287.98	\$ 450,753,638.38
Existing Signal Upgrades and Retimings	EACH	54	\$	27,000,000.00	\$ 46,817,623.08
Utility Relocations	LF	61,429	\$	99,638,065.08	\$ 172,771,013.88
Signing/Delineation	LS	1.5%	\$	10,269,422.70	\$ 17,807,035.59
Landscaping and Public Art	LS	2.0%	\$	13,692,563.60	\$ 23,742,714.13
ROADWAY SUBTOTAL			\$	708,590,166.11	\$ 1,228,685,456.00

TRANSIT					
IMPROVEMENT DESCRIPTION	UOM	QUANTITY	TOTAL COST (2024)		TOTAL COST (2040)
Guideway - Aerial	LF	29,570	\$	644,064,170.00	\$ 1,116,798,279.53
Guideway - At-Grade in Mixed Traffic	LF	28,387	\$	245,150,132.00	\$ 425,086,906.55
Guideway - At-Grade Semi Exclusive	LF	39,635	\$	397,301,240.00	\$ 688,914,803.77
Special Work for Intersections & Yard (TO & Switches)	TF	15	\$	3,375,000.00	\$ 5,852,202.88
LRV Yard Track	TF	2,000	\$	252,000.00	\$ 436,964.48
LRV Yard Track Turnouts	EA	5	\$	860,000.00	\$ 1,491,227.99
At-Grade Stations	EA	18	\$	97,080,714.00	\$ 168,336,602.81
Aerial Stations	EA	4	\$	38,639,376.00	\$ 67,000,138.57
Maintenance Facility	SF	30,000	\$	30,000,000.00	\$ 52,019,581.19
Transition Structures from At-Grade to Elevated	EA	1	\$	826,000.00	\$ 1,432,272.47
Roadway Reconstruction for At grade LRT	LF	28,387	\$	19,092,785.75	\$ 33,106,623.96
Vehicles	VEH	42	\$	331,072,140.00	\$ 574,074,468.94
MEP	LS	2.0%	\$	29,532,828.36	\$ 51,209,512.08
Transit Lighting	LS	3.0%	\$	44,299,242.53	\$ 76,814,268.13
Station Signage	LS	1.0%	\$	1,357,200.90	\$ 2,353,367.41
TRANSIT SUBTOTAL			\$	1,882,902,829.54	\$ 3,264,927,220.78

Notes:

- Total Length of Roadway Improvements = 11.6 Miles
 - Old York Road to Southampton Road
- Total Length of LRT Improvements = 18.5 Miles
 - Wissahickon Transportation Center to Neshaminy Mall
- Includes cost for Trackless Trolley Modifications at Frankford Transportation Center
- Inflation Rate = 3.5%
- See Definition of Alternatives Report for roadway and transit segmentation.
- ESTIMATE VARIABILITY:** The costs shown in this estimate represent an estimate of probable costs prepared in good faith and with reasonable care. HNTB has no control over the costs of construction labor, materials, or equipment, nor over competitive bidding or negotiating methods and does not make any commitment or assume any duty to assure that bids or negotiated prices will not vary from this estimate.

TRANSIT SUBTOTAL	\$	1,882,902,829.54	\$	3,264,927,220.78
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PROJECT SUBTOTAL	\$	2,591,492,995.65	\$	4,493,612,676.78
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Erosion & Sediment Control	5.00%	\$ 129,574,649.78	\$ 224,680,633.84
Maintenance and Protection of Traffic	5.00%	\$ 129,574,649.78	\$ 224,680,633.84
Mobilization	5.00%	\$ 129,574,649.78	\$ 224,680,633.84
Clearing and Grubbing	2.00%	\$ 51,829,859.91	\$ 89,872,253.54
SUBTOTAL		\$ 3,032,046,804.91	\$ 5,257,526,831.83

Preliminary Engineering	2.25%	\$ 68,221,053.11	\$ 118,294,353.72
Final Design	13.00%	\$ 394,166,084.64	\$ 683,478,488.14
PM/CA	13.50%	\$ 409,326,318.66	\$ 709,766,122.30
Insurance	2.25%	\$ 68,221,053.11	\$ 118,294,353.72
Other	1.00%	\$ 30,320,468.05	\$ 52,575,268.32
SUBTOTAL		\$ 4,002,301,782.49	\$ 6,939,935,418.01

Contingency	40.00%	\$ 1,600,920,712.99	\$ 2,775,974,167.21
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TOTAL PROJECT COST	\$	5,603,222,495.48	\$	9,715,909,585.22
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Project Information	
Project Name	Roosevelt Blvd 2040 Cost Estimates
Job No.	74882

Roosevelt Blvd Alt 2B Cost Estimate

Neighborhood Blvd with BRT

IMPROVEMENT DESCRIPTION	UOM	QUANTITY	ROADWAY	
			TOTAL COST (2024)	TOTAL COST (2040)
Travel Lanes	LF	61,429	\$ 176,296,487.42	\$ 305,695,648.06
New Intersection Signalization	EACH	29	\$ 14,500,000.00	\$ 25,142,797.58
Sidewalk	LF	61,429	\$ 57,970,906.93	\$ 100,520,743.34
Bike Lanes	LF	61,429	\$ 37,774,507.30	\$ 65,500,468.32
Median Landscaping	LF	61,429	\$ 11,495,925.10	\$ 19,933,773.63
Drainage and Stormwater Management	LF	61,429	\$ 259,952,287.98	\$ 450,753,638.38
Existing Signal Upgrades and Retimings	EACH	54	\$ 27,000,000.00	\$ 46,817,623.08
Utility Relocations	LF	61,429	\$ 99,638,065.08	\$ 172,771,013.88
Signing/Delineation	LS	1.5%	\$ 10,269,422.70	\$ 17,807,035.59
Landscaping and Public Art	LS	2.0%	\$ 13,692,563.60	\$ 23,742,714.13
ROADWAY SUBTOTAL			\$ 708,590,166.11	\$ 1,228,685,456.00

IMPROVEMENT DESCRIPTION	UOM	QUANTITY	TRANSIT	
			TOTAL COST (2024)	TOTAL COST (2040)
At Grade BRT Dedicated Lane	LF	56,339	\$ 54,430,745.32	\$ 94,382,152.53
Stations	EA	22	\$ 31,761,664.00	\$ 55,074,281.98
Maintenance Facility	SF	40,000	\$ 32,000,000.00	\$ 55,487,553.27
Vehicles	VEH	42	\$ 57,318,324.00	\$ 99,389,173.64
MEP	LS	2.0%	\$ 2,363,848.19	\$ 4,098,879.76
Transit Lighting	LS	3.0%	\$ 3,545,772.28	\$ 6,148,319.63
Station Signage	LS	1.0%	\$ 317,616.64	\$ 3,084,320.41
TRANSIT SUBTOTAL			\$ 181,737,970.43	\$ 317,664,681.22

Notes:

- Total Length of Roadway Improvements = 11.6 Miles
 - Old York Road to Southampton Road
- Total Length of BRT Improvements = 18.7 Miles
 - Wissahickon Transportation Center to Neshaminy Mall
- Inflation Rate = 3.5%
- See Definition of Alternatives Report for roadway and transit segmentation.
- ESTIMATE VARIABILITY: The costs shown in this estimate represent an estimate of probable costs prepared in good faith and with reasonable care. HNTB has no control over the costs of construction labor, materials, or equipment, nor over competitive bidding or negotiating methods and does not make any commitment or assume any duty to assure that bids or negotiated prices will not vary from this estimate.

PROJECT SUBTOTAL		\$ 890,328,136.54	\$ 1,546,350,137.22
Erosion & Sediment Control	5.00%	\$ 44,516,406.83	\$ 77,317,506.86
Maintenance and Protection of Traffic	5.00%	\$ 44,516,406.83	\$ 77,317,506.86
Mobilization	5.00%	\$ 44,516,406.83	\$ 77,317,506.86
Clearing and Grubbing	2.00%	\$ 17,806,562.73	\$ 30,927,002.74
SUBTOTAL		\$ 1,041,683,919.75	\$ 1,809,229,660.55
Preliminary Engineering	2.00%	\$ 20,833,678.40	\$ 36,184,593.21
Final Design	11.50%	\$ 119,793,650.77	\$ 208,061,410.96
PM/CA	12.00%	\$ 125,002,070.37	\$ 217,107,559.27
Insurance	2.00%	\$ 20,833,678.40	\$ 36,184,593.21
Other	1.00%	\$ 10,416,839.20	\$ 18,092,296.61
SUBTOTAL		\$ 1,338,563,836.88	\$ 2,324,860,113.81
Contingency	40%	\$ 535,425,534.75	\$ 929,944,045.52
TOTAL PROJECT COST		\$ 1,873,989,371.64	\$ 3,254,804,159.33

Project Information	
Project Name	Roosevelt Blvd 2040 Cost Estimates
Job No.	74882

Roosevelt Blvd Alt 3 Cost Estimate

Partially Capped Expressway with Subway

IMPROVEMENT DESCRIPTION	UOM	QUANTITY	ROADWAY	
			TOTAL COST (2024)	TOTAL COST (2040)
Depressed Full Cap	LF	20,427	\$ 800,476,406.68	\$ 1,388,014,914.39
Depressed Full Cap with Ramps	LF	4,779	\$ 369,757,804.17	\$ 641,154,870.55
Depressed Partially Capped with At-Grade Intersections	LF	2,122	\$ 158,888,662.84	\$ 275,510,723.24
Depressed Partial Cap	LF	11,455	\$ 403,187,126.68	\$ 699,120,849.10
Depressed Partial Cap with Ramps	LF	4,779	\$ 176,980,361.47	\$ 306,881,476.11
Travel Lanes (Local Lanes)	LF	61,429	\$ 88,737,963.45	\$ 153,870,389.83
Travel Lanes (At Grade)	LF	19,989	\$ 28,875,590.21	\$ 50,069,870.32
Sidewalk	LF	61,429	\$ 62,111,686.00	\$ 107,700,796.43
Bike Lanes	LF	61,429	\$ 37,774,507.30	\$ 65,500,468.32
Median Landscaping	LF	27,329	\$ 6,788,126.16	\$ 11,770,516.00
Drainage and Stormwater Management	LF	61,429	\$ 190,597,093.54	\$ 330,492,699.43
Existing Signal Upgrades and Retimings	EACH	54	\$ 27,000,000.00	\$ 46,817,623.08
Utility Relocations	LF	61,429	\$ 99,638,065.08	\$ 172,771,013.88
Signing/Delineation	LS	1.5%	\$ 36,762,200.90	\$ 63,745,143.16
Landscaping and Public Art	LS	2.0%	\$ 49,016,267.87	\$ 84,993,524.21
Roadway Lighting	LS	2.0%	\$ 49,016,267.87	\$ 84,993,524.21
ROADWAY SUBTOTAL			\$ 2,585,608,130.23	\$ 4,483,408,402.29

IMPROVEMENT DESCRIPTION	UOM	QUANTITY	TRANSIT	
			TOTAL COST (2024)	TOTAL COST (2040)
2-Track, Bored Tunnel Subway	LF	5,332	\$ 173,705,896.00	\$ 301,203,598.70
2-Track, Cut and Cover Subway	LF	38,785	\$ 1,352,937,155.00	\$ 2,345,974,139.54
2-Track, Elevated Subway	LF	29,590	\$ 605,497,045.71	\$ 1,049,923,424.42
2-Track, At Grade Subway	LF	3,889	\$ 17,671,616.00	\$ 30,642,335.45
Interlockings	EA	6	\$ 40,800,000.00	\$ 70,746,630.43
BSS Terminal Yard Tracks	TF	8,000	\$ 11,168,000.00	\$ 19,365,156.09
Junction @ Erie BSS	EA	2	\$ 450,000.00	\$ 780,293.72
Yard Turnouts	EA	8	\$ 1,376,000.00	\$ 2,385,964.79
Subgrade Stations	EA	8	\$ 958,340,608.00	\$ 1,661,749,235.67
Elevated Stations	EA	4	\$ 262,507,504.00	\$ 455,184,347.29
Fare Collection System @ Stations	EA	12	\$ 45,297,456.00	\$ 78,545,156.34
Maintenance Facility	SF	30,000	\$ 30,000,000.00	\$ 52,019,581.19
Vehicles	VEH	144	\$ 741,543,696.00	\$ 1,285,826,416.79
MEP	LS	2.0%	\$ 69,995,025.61	\$ 121,370,397.27
Transit Lighting	LS	3.0%	\$ 104,992,538.42	\$ 182,055,595.91
Station Signage	LS	1.0%	\$ 34,997,512.81	\$ 60,685,198.64
TRANSIT SUBTOTAL			\$ 4,451,280,053.55	\$ 7,718,457,472.23

- Notes:
- Total Length of Roadway Improvements = 11.6 Miles
 - Old York Road to Southampton Road
 - Total Length of Subway Improvements = 14.7 Miles
 - Broad and Erie to Neshaminy Mall
 - Cost for extension to Frankford Transportation Center not included
 - Cost includes subway extension from Southampton Road to Neshaminy Mall estimated at \$264,100,000.00 (2024).
 - Inflation Rate = 3.5%
 - See Definition of Alternatives Report for roadway and transit segmentation.
 - ESTIMATE VARIABILITY: The costs shown in this estimate represent an estimate of probable costs prepared in good faith and with reasonable care. HNTB has no control over the costs of construction labor, materials, or equipment, nor over competitive bidding or negotiating methods and does not make any commitment or assume any duty to assure that bids or negotiated prices will not vary from this estimate.

PROJECT SUBTOTAL		\$ 7,036,888,183.79	\$ 12,201,865,874.52
Erosion & Sediment Control	5.00%	\$ 351,844,409.19	\$ 610,093,293.73
Maintenance and Protection of Traffic	5.00%	\$ 351,844,409.19	\$ 610,093,293.73
Mobilization	5.00%	\$ 351,844,409.19	\$ 610,093,293.73
Clearing and Grubbing	2.00%	\$ 140,737,763.68	\$ 244,037,317.49
SUBTOTAL		\$ 8,233,159,175.03	\$ 14,276,183,073.19
Preliminary Engineering	8.25%	\$ 679,235,631.94	\$ 1,177,785,103.54
Final Design	12.75%	\$ 1,049,727,794.82	\$ 1,820,213,341.83
PM/CA	13.25%	\$ 1,090,893,590.69	\$ 1,891,594,257.20
Insurance	2.00%	\$ 164,663,183.50	\$ 285,523,661.46
Other	1.00%	\$ 82,331,591.75	\$ 142,761,830.73
SUBTOTAL		\$ 11,300,010,967.73	\$ 19,594,061,267.96
Contingency	40.00%	\$ 4,520,004,387.09	\$ 7,837,624,507.18
TOTAL PROJECT COST		\$ 15,820,015,354.83	\$ 27,431,685,775.14

Project Information	
Project Name	Roosevelt Blvd 2040 Cost Estimates
Job No.	74882

Roosevelt Blvd Alt 3.2 Cost Estimate

Partially Capped Expressway with Subway (Underground to MFL)

IMPROVEMENT DESCRIPTION	UOM	QUANTITY	ROADWAY	
			TOTAL COST (2024)	TOTAL COST (2040)
Depressed Full Cap	LF	20,427	\$ 800,476,406.68	\$ 1,388,014,914.39
Depressed Full Cap with Ramps	LF	4,779	\$ 369,757,804.17	\$ 641,154,870.55
Depressed Partially Capped with At-Grade Intersections	LF	2,122	\$ 158,888,662.84	\$ 275,510,723.24
Depressed Partial Cap	LF	11,455	\$ 403,187,126.68	\$ 699,120,849.10
Depressed Partial Cap with Ramps	LF	4,779	\$ 176,980,361.47	\$ 306,881,476.11
Travel Lanes (Local Lanes)	LF	61,429	\$ 88,737,963.45	\$ 153,870,389.83
Travel Lanes (At Grade)	LF	19,989	\$ 28,875,590.21	\$ 50,069,870.32
Sidewalk	LF	61,429	\$ 62,111,686.00	\$ 107,700,796.43
Bike Lanes	LF	61,429	\$ 37,774,507.30	\$ 65,500,468.32
Median Landscaping	LF	27,329	\$ 6,788,126.16	\$ 11,770,516.00
Drainage and Stormwater Management	LF	61,429	\$ 190,597,093.54	\$ 330,492,699.43
Existing Signal Upgrades and Retimings	EACH	54	\$ 27,000,000.00	\$ 46,817,623.08
Utility Relocations	LF	61,429	\$ 99,638,065.08	\$ 172,771,013.88
Signing/Delineation	LS	1.5%	\$ 36,762,200.90	\$ 63,745,143.16
Landscaping and Public Art	LS	2.0%	\$ 49,016,267.87	\$ 84,993,524.21
Roadway Lighting	LS	2.0%	\$ 49,016,267.87	\$ 84,993,524.21
ROADWAY SUBTOTAL			\$ 2,585,608,130.23	\$ 4,483,408,402.29

IMPROVEMENT DESCRIPTION	UOM	QUANTITY	TRANSIT	
			TOTAL COST (2024)	TOTAL COST (2040)
2-Track, Bored Tunnel Subway	LF	5,332	\$ 173,705,896.00	\$ 301,203,598.70
2-Track, Cut and Cover Subway	LF	38,785	\$ 1,352,937,155.00	\$ 2,345,974,139.54
2-Track, Elevated Subway	LF	29,590	\$ 605,497,045.71	\$ 1,049,923,424.42
2-Track, At Grade Subway	LF	3,889	\$ 17,671,616.00	\$ 30,642,335.45
2-Track, Cut and Cover Extension to MFL	LF	4,224	\$ 143,451,264.00	\$ 248,742,489.17
Bridge Street Garage Demolition	LF	370	\$ 396,640.00	\$ 687,768.22
Interlockings	EA	6	\$ 40,800,000.00	\$ 70,746,630.43
BSS Terminal Yard Tracks	TF	8,000	\$ 11,168,000.00	\$ 19,365,156.09
Junction @ Erie BSS	EA	2	\$ 450,000.00	\$ 780,293.72
Yard Turnouts	EA	8	\$ 1,376,000.00	\$ 2,385,964.79
Subgrade Stations	EA	8	\$ 958,340,608.00	\$ 1,661,749,235.67
Elevated Stations	EA	4	\$ 262,507,504.00	\$ 455,184,347.29
Fare Collection System @ Stations	EA	12	\$ 45,297,456.00	\$ 78,545,156.34
Maintenance Facility	SF	30,000	\$ 30,000,000.00	\$ 52,019,581.19
Vehicles	VEH	159	\$ 818,787,831.00	\$ 1,419,766,668.54
MEP	LS	2.0%	\$ 72,871,983.69	\$ 126,359,002.42
Transit Lighting	LS	3.0%	\$ 109,307,975.54	\$ 189,538,503.63
Station Signage	LS	1.0%	\$ 43,615,531.03	\$ 75,628,721.93
TRANSIT SUBTOTAL			\$ 4,688,182,505.98	\$ 8,129,243,017.54

- Notes:
- Total Length of Roadway Improvements = 11.6 Miles
 - Old York Road to Southampton Road
 - Total Length of Subway Improvements = 14.7 Miles
 - Broad and Erie to Neshaminy Mall
 - Cost for underground extension to Frankford Transportation Center included
 - Cost includes subway extension from Southampton Road to Neshaminy Mall estimated at \$264,100,000.00 (2024).
 - Inflation Rate = 3.5%
 - See Definition of Alternatives Report for roadway and transit segmentation.
 - ESTIMATE VARIABILITY: The costs shown in this estimate represent an estimate of probable costs prepared in good faith and with reasonable care. HNTB has no control over the costs of construction labor, materials, or equipment, nor over competitive bidding or negotiating methods and does not make any commitment or assume any duty to assure that bids or negotiated prices will not vary from this estimate.

PROJECT SUBTOTAL

\$ 7,273,790,636.22

\$ 12,612,651,419.83

Erosion & Sediment Control	5.00%	\$ 363,689,531.81	\$ 630,632,570.99
Maintenance and Protection of Traffic	5.00%	\$ 363,689,531.81	\$ 630,632,570.99
Mobilization	5.00%	\$ 363,689,531.81	\$ 630,632,570.99
Clearing and Grubbing	2.00%	\$ 145,475,812.72	\$ 252,253,028.40
SUBTOTAL		\$ 8,510,335,044.37	\$ 14,756,802,161.20
Preliminary Engineering	8.25%	\$ 702,102,641.16	\$ 1,217,436,178.30
Final Design	12.75%	\$ 1,085,067,718.16	\$ 1,881,492,275.55
PM/CA	13.25%	\$ 1,127,619,393.38	\$ 1,955,276,286.36
Insurance	2.00%	\$ 170,206,700.89	\$ 295,136,043.22
Other	1.00%	\$ 85,103,350.44	\$ 147,568,021.61
SUBTOTAL		\$ 11,680,434,848.40	\$ 20,253,710,966.25
Contingency	40.00%	\$ 4,672,173,939.36	\$ 8,101,484,386.50
TOTAL PROJECT COST		\$ 16,352,608,787.76	\$ 28,355,195,352.75

Project Information	
Project Name	Roosevelt Blvd 2040 Cost Estimates
Job No.	74882

Roosevelt Blvd Alt 3.3 Cost Estimate

Partially Capped Expressway with Subway (Elevated to MFL)

IMPROVEMENT DESCRIPTION	UOM	QUANTITY	ROADWAY	
			TOTAL COST (2024)	TOTAL COST (2040)
Depressed Full Cap	LF	20,427	\$ 800,476,406.68	\$ 1,388,014,914.39
Depressed Full Cap with Ramps	LF	4,779	\$ 369,757,804.17	\$ 641,154,870.55
Depressed Partially Capped with At-Grade Intersections	LF	2,122	\$ 158,888,662.84	\$ 275,510,723.24
Depressed Partial Cap	LF	11,455	\$ 403,187,126.68	\$ 699,120,849.10
Depressed Partial Cap with Ramps	LF	4,779	\$ 176,980,361.47	\$ 306,881,476.11
Travel Lanes (Local Lanes)	LF	61,429	\$ 88,737,963.45	\$ 153,870,389.83
Travel Lanes (At Grade)	LF	19,989	\$ 28,875,590.21	\$ 50,069,870.32
Sidewalk	LF	61,429	\$ 62,111,686.00	\$ 107,700,796.43
Bike Lanes	LF	61,429	\$ 37,774,507.30	\$ 65,500,468.32
Median Landscaping	LF	27,329	\$ 6,788,126.16	\$ 11,770,516.00
Drainage and Stormwater Management	LF	61,429	\$ 190,597,093.54	\$ 330,492,699.43
Existing Signal Upgrades and Retimings	EACH	54	\$ 27,000,000.00	\$ 46,817,623.08
Utility Relocations	LF	61,429	\$ 99,638,065.08	\$ 172,771,013.88
Signing/Delineation	LS	1.5%	\$ 36,762,200.90	\$ 63,745,143.16
Landscaping and Public Art	LS	2.0%	\$ 49,016,267.87	\$ 84,993,524.21
Roadway Lighting	LS	2.0%	\$ 49,016,267.87	\$ 84,993,524.21
ROADWAY SUBTOTAL			\$ 2,585,608,130.23	\$ 4,483,408,402.29

IMPROVEMENT DESCRIPTION	UOM	QUANTITY	TRANSIT	
			TOTAL COST (2024)	TOTAL COST (2040)
2-Track, Bored Tunnel Subway	LF	5,332	\$ 173,705,896.00	\$ 301,203,598.70
2-Track, Cut and Cover Subway	LF	38,785	\$ 1,352,937,155.00	\$ 2,345,974,139.54
2-Track, Elevated Subway	LF	29,590	\$ 605,497,045.71	\$ 1,049,923,424.42
2-Track, At Grade Subway	LF	3,889	\$ 17,671,616.00	\$ 30,642,335.45
2-Track, Elevated Extension to MFL	LF	4,224	\$ 85,341,028.85	\$ 147,980,152.65
MFL Junction @ FTC (Special Work and WYE)	EA	2	\$ 2,000,000.00	\$ 3,467,972.08
Bridge Street Garage Demolition	LF	370	\$ 396,640.00	\$ 687,768.22
Interlockings	EA	6	\$ 40,800,000.00	\$ 70,746,630.43
BSS Terminal Yard Tracks	TF	8,000	\$ 11,168,000.00	\$ 19,365,156.09
Junction @ Erie BSS	EA	2	\$ 450,000.00	\$ 780,293.72
Yard Turnouts	EA	8	\$ 1,376,000.00	\$ 2,385,964.79
Subgrade Stations	EA	8	\$ 958,340,608.00	\$ 1,661,749,235.67
Elevated Stations	EA	4	\$ 262,507,504.00	\$ 455,184,347.29
Fare Collection System @ Stations	EA	12	\$ 45,297,456.00	\$ 78,545,156.34
Maintenance Facility	SF	30,000	\$ 30,000,000.00	\$ 52,019,581.19
Vehicles	VEH	159	\$ 818,787,831.00	\$ 1,419,766,668.54
MEP	LS	2.0%	\$ 71,749,778.99	\$ 124,413,115.13
Transit Lighting	LS	3.0%	\$ 107,624,668.49	\$ 186,619,672.70
Station Signage	LS	1.0%	\$ 43,043,206.64	\$ 74,636,319.42
TRANSIT SUBTOTAL			\$ 4,628,694,434.67	\$ 8,026,091,532.36

Notes:

- Total Length of Roadway Improvements = 11.6 Miles
 - Old York Road to Southampton Road
- Total Length of Subway Improvements = 14.7 Miles
 - Broad and Erie to Neshaminy Mall
- Cost for elevated extension to Frankford Transportation Center included
- Cost includes subway extension from Southampton Road to Neshaminy Mall estimated at \$264,100,000.00 (2024).
- Inflation Rate = 3.5%
- See Definition of Alternatives Report for roadway and transit segmentation.
- ESTIMATE VARIABILITY: The costs shown in this estimate represent an estimate of probable costs prepared in good faith and with reasonable care. HNTB has no control over the costs of construction labor, materials, or equipment, nor over competitive bidding or negotiating methods and does not make any commitment or assume any duty to assure that bids or negotiated prices will not vary from this estimate.

PROJECT SUBTOTAL		\$ 7,214,302,564.91	\$ 12,509,499,934.65
Erosion & Sediment Control	5.00%	\$ 360,715,128.25	\$ 625,474,996.73
Maintenance and Protection of Traffic	5.00%	\$ 360,715,128.25	\$ 625,474,996.73
Mobilization	5.00%	\$ 360,715,128.25	\$ 625,474,996.73
Clearing and Grubbing	2.00%	\$ 144,286,051.30	\$ 250,189,998.69
SUBTOTAL		\$ 8,440,734,000.94	\$ 14,636,114,923.54
Preliminary Engineering	8.25%	\$ 696,360,555.08	\$ 1,207,479,481.19
Final Design	12.75%	\$ 1,076,193,585.12	\$ 1,866,104,652.75
PM/CA	13.25%	\$ 1,118,397,255.12	\$ 1,939,285,227.37
Insurance	2.00%	\$ 168,814,680.02	\$ 292,722,298.47
Other	1.00%	\$ 84,407,340.01	\$ 146,361,149.24
SUBTOTAL		\$ 11,584,907,416.29	\$ 20,088,067,732.56
Contingency	40.00%	\$ 4,633,962,966.52	\$ 8,035,227,093.02
TOTAL PROJECT COST		\$ 16,218,870,382.81	\$ 28,123,294,825.58

Project Information	
Project Name	Roosevelt Blvd 2040 Cost Estimates
Job No.	74882

Roosevelt Blvd Alt 4 Cost Estimate

Neighborhood Blvd with Subway

IMPROVEMENT DESCRIPTION		UOM	QUANTITY	TOTAL COST (2024)		TOTAL COST (2040)
Travel Lanes		LF	61,429	\$	176,296,487.42	\$ 305,695,648.06
New Intersection Signalization		EACH	29	\$	14,500,000.00	\$ 25,142,797.58
Sidewalk		LF	61,429	\$	57,970,906.93	\$ 100,520,743.34
Bike Lanes		LF	61,429	\$	37,774,507.30	\$ 65,500,468.32
Median Landscaping		LF	61,429	\$	11,495,925.10	\$ 19,933,773.63
Drainage and Stormwater Management		LF	61,429	\$	259,952,287.98	\$ 450,753,638.38
Existing Signal Upgrades and Retimings		EACH	54	\$	27,000,000.00	\$ 46,817,623.08
Utility Relocations		LF	61,429	\$	99,638,065.08	\$ 172,771,013.88
Signing/Delineation		LS	1.5%	\$	10,269,422.70	\$ 17,807,035.59
Landscaping and Public Art		LS	2.0%	\$	13,692,563.60	\$ 23,742,714.13
Roadway Lighting		LS	2.0%	\$	13,692,563.60	\$ 23,742,714.13
ROADWAY SUBTOTAL				\$	722,282,729.71	\$ 1,252,428,170.12
IMPROVEMENT DESCRIPTION		UOM	QUANTITY	TOTAL COST (2024)		TOTAL COST (2040)
2-Track, Bored Tunnel Subway		LF	5,332	\$	173,705,896.00	\$ 301,203,598.70
2-Track, Cut and Cover Subway		LF	38,785	\$	1,352,937,155.00	\$ 2,345,974,139.54
2-Track, Elevated Subway		LF	29,590	\$	605,497,045.71	\$ 1,049,923,424.42
2-Track, At Grade Subway		LF	3,889	\$	17,671,616.00	\$ 30,642,335.45
Interlockings		EA	6	\$	40,800,000.00	\$ 70,746,630.43
BSS Terminal Yard Tracks		TF	8,000	\$	11,168,000.00	\$ 19,365,156.09
Junction @ Erie BSS		EA	2	\$	450,000.00	\$ 780,293.72
Yard Turnouts		EA	8	\$	1,376,000.00	\$ 2,385,964.79
Subgrade Stations		EA	8	\$	958,340,608.00	\$ 1,661,749,235.67
Elevated Stations		EA	4	\$	262,507,504.00	\$ 455,184,347.29
Fare Collection System @ Stations		EA	12	\$	45,297,456.00	\$ 78,545,156.34
Maintenance Facility		SF	30,000	\$	30,000,000.00	\$ 52,019,581.19
Vehicles		VEH	144	\$	741,543,696.00	\$ 1,285,826,416.79
MEP		LS	2.0%	\$	69,995,025.61	\$ 121,370,397.27
Transit Lighting		LS	3.0%	\$	104,992,538.42	\$ 182,055,595.91
Station Signage		LS	1.0%	\$	34,997,512.81	\$ 60,685,198.64
TRANSIT SUBTOTAL				\$	4,451,280,053.55	\$ 7,718,457,472.23

Notes:

- Total Length of Roadway Improvements = 11.6 Miles
 - Old York Road to Southampton Road
- Total Length of Subway Improvements = 14.7 Miles
 - Broad and Erie to Neshaminy Mall
- Cost for extension to Frankford Transportation Center not included
- Cost includes subway extension from Southampton Road to Neshaminy Mall estimated at \$264,100,000.00 (2024).
- Inflation Rate = 3.5%
- See Definition of Alternatives Report for roadway and transit segmentation.
- ESTIMATE VARIABILITY:** The costs shown in this estimate represent an estimate of probable costs prepared in good faith and with reasonable care. HNTB has no control over the costs of construction labor, materials, or equipment, nor over competitive bidding or negotiating methods and does not make any commitment or assume any duty to assure that bids or negotiated prices will not vary from this estimate.

PROJECT SUBTOTAL		\$ 5,173,562,783.26	\$ 8,970,885,642.35
Erosion & Sediment Control	5.00%	\$ 258,678,139.16	\$ 448,544,282.12
Maintenance and Protection of Traffic	5.00%	\$ 258,678,139.16	\$ 448,544,282.12
Mobilization	5.00%	\$ 258,678,139.16	\$ 448,544,282.12
Clearing and Grubbing	2.00%	\$ 103,471,255.67	\$ 179,417,712.85
SUBTOTAL		\$ 6,053,068,456.42	\$ 10,495,936,201.55
Preliminary Engineering	8.25%	\$ 499,378,147.65	\$ 865,914,736.63
Final Design	12.75%	\$ 771,766,228.19	\$ 1,338,231,865.70
PM/CA	13.25%	\$ 802,031,570.48	\$ 1,390,711,546.71
Insurance	2.00%	\$ 121,061,369.13	\$ 209,918,724.03
Other	1.00%	\$ 60,530,684.56	\$ 104,959,362.02
SUBTOTAL		\$ 8,307,836,456.43	\$ 14,405,672,436.63
Contingency	40.00%	\$ 3,323,134,582.57	\$ 5,762,268,974.65
TOTAL PROJECT COST		\$ 11,630,971,039.01	\$ 20,167,941,411.29

Project Information	
Project Name	Roosevelt Blvd 2040 Cost Estimates
Job No.	74882

Roosevelt Blvd Alt 4.2 Cost Estimate

Neighborhood Blvd with Subway (Underground to MFL)

IMPROVEMENT DESCRIPTION	UOM	ROADWAY		TOTAL COST (2024)	TOTAL COST (2040)
		QUANTITY			
Travel Lanes	LF	61,429	\$	176,296,487.42	\$ 305,695,648.06
New Intersection Signalization	EACH	29	\$	14,500,000.00	\$ 25,142,797.58
Sidewalk	LF	61,429	\$	57,970,906.93	\$ 100,520,743.34
Bike Lanes	LF	61,429	\$	37,774,507.30	\$ 65,500,468.32
Median Landscaping	LF	61,429	\$	11,495,925.10	\$ 19,933,773.63
Drainage and Stormwater Management	LF	61,429	\$	259,952,287.98	\$ 450,753,638.38
Existing Signal Upgrades and Retimings	EACH	54	\$	27,000,000.00	\$ 46,817,623.08
Utility Relocations	LF	61,429	\$	99,638,065.08	\$ 172,771,013.88
Signing/Delineation	LS	1.5%	\$	10,269,422.70	\$ 17,807,035.59
Landscaping and Public Art	LS	2.0%	\$	13,692,563.60	\$ 23,742,714.13
Roadway Lighting	LS	2.0%	\$	13,692,563.60	\$ 23,742,714.13
ROADWAY SUBTOTAL				\$ 722,282,729.71	\$ 1,252,428,170.12

IMPROVEMENT DESCRIPTION	UOM	TRANSIT		TOTAL COST (2024)	TOTAL COST (2040)
		QUANTITY			
2-Track, Bored Tunnel Subway	LF	5,332	\$	173,705,896.00	\$ 301,203,598.70
2-Track, Cut and Cover Subway	LF	38,785	\$	1,352,937,155.00	\$ 2,345,974,139.54
2-Track, Elevated Subway	LF	29,590	\$	605,497,045.71	\$ 1,049,923,424.42
2-Track, At Grade Subway	LF	3,889	\$	17,671,616.00	\$ 30,642,335.45
2-Track, Cut and Cover Extension to MFL	LF	4,224	\$	143,451,264.00	\$ 248,742,489.17
Bridge Street Garage Demolition	LF	370	\$	396,640.00	\$ 687,768.22
Interlockings	EA	6	\$	40,800,000.00	\$ 70,746,630.43
BSS Terminal Yard Tracks	TF	8,000	\$	11,168,000.00	\$ 19,365,156.09
Junction @ Erie BSS	EA	2	\$	450,000.00	\$ 780,293.72
Yard Turnouts	EA	8	\$	1,376,000.00	\$ 2,385,964.79
Subgrade Stations	EA	8	\$	958,340,608.00	\$ 1,661,749,235.67
Elevated Stations	EA	4	\$	262,507,504.00	\$ 455,184,347.29
Fare Collection System @ Stations	EA	12	\$	45,297,456.00	\$ 78,545,156.34
Maintenance Facility	SF	30,000	\$	30,000,000.00	\$ 52,019,581.19
Vehicles	VEH	159	\$	818,787,831.00	\$ 1,419,766,668.54
MEP	LS	2.0%	\$	72,871,983.69	\$ 126,359,002.42
Transit Lighting	LS	3.0%	\$	109,307,975.54	\$ 189,538,503.63
Station Signage	LS	1.0%	\$	43,615,531.03	\$ 75,628,721.93
TRANSIT SUBTOTAL				\$ 4,688,182,505.98	\$ 8,129,243,017.54

Notes:

- Total Length of Roadway Improvements = 11.6 Miles
 - Old York Road to Southampton Road
- Total Length of Subway Improvements = 14.7 Miles
 - Broad and Erie to Neshaminy Mall
- Cost for underground extension to Frankford Transportation Center included
- Cost includes subway extension from Southampton Road to Neshaminy Mall estimated at \$264,100,000.00 (2024).
- Inflation Rate = 3.5%
- See Definition of Alternatives Report for roadway and transit segmentation.
- ESTIMATE VARIABILITY: The costs shown in this estimate represent an estimate of probable costs prepared in good faith and with reasonable care. HNTB has no control over the costs of construction labor, materials, or equipment, nor over competitive bidding or negotiating methods and does not make any commitment or assume any duty to assure that bids or negotiated prices will not vary from this estimate.

PROJECT SUBTOTAL		\$ 5,410,465,235.69	\$ 9,381,671,187.66
Erosion & Sediment Control	5.00%	\$ 270,523,261.78	\$ 469,083,559.38
Maintenance and Protection of Traffic	5.00%	\$ 270,523,261.78	\$ 469,083,559.38
Mobilization	5.00%	\$ 270,523,261.78	\$ 469,083,559.38
Clearing and Grubbing	2.00%	\$ 108,209,304.71	\$ 187,633,423.75
SUBTOTAL		\$ 6,330,244,325.76	\$ 10,976,555,289.57
Preliminary Engineering	8.25%	\$ 522,245,156.87	\$ 905,565,811.39
Final Design	12.75%	\$ 807,106,151.53	\$ 1,399,510,799.42
PM/CA	13.25%	\$ 838,757,373.16	\$ 1,454,393,575.87
Insurance	2.00%	\$ 126,604,886.52	\$ 219,531,105.79
Other	1.00%	\$ 63,302,443.26	\$ 109,765,552.90
SUBTOTAL		\$ 8,688,260,337.10	\$ 15,065,322,134.93
Contingency	40.00%	\$ 3,475,304,134.84	\$ 6,026,128,853.97
TOTAL PROJECT COST		\$ 12,163,564,471.94	\$ 21,091,450,988.90

Project Information	
Project Name	Roosevelt Blvd 2040 Cost Estimates
Job No.	74882

Roosevelt Blvd Alt 4.3 Cost Estimate

Neighborhood Blvd with Subway (Elevated to MFL)

IMPROVEMENT DESCRIPTION	UOM	ROADWAY		TOTAL COST (2024)	TOTAL COST (2040)
		QUANTITY			
Travel Lanes	LF	61,429	\$	176,296,487.42	\$ 305,695,648.06
New Intersection Signalization	EACH	29	\$	14,500,000.00	\$ 25,142,797.58
Sidewalk	LF	61,429	\$	57,970,906.93	\$ 100,520,743.34
Bike Lanes	LF	61,429	\$	37,774,507.30	\$ 65,500,468.32
Median Landscaping	LF	61,429	\$	11,495,925.10	\$ 19,933,773.63
Drainage and Stormwater Management	LF	61,429	\$	259,952,287.98	\$ 450,753,638.38
Existing Signal Upgrades and Retimings	EACH	54	\$	27,000,000.00	\$ 46,817,623.08
Utility Relocations	LF	61,429	\$	99,638,065.08	\$ 172,771,013.88
Signing/Delineation	LS	1.5%	\$	10,269,422.70	\$ 17,807,035.59
Landscaping and Public Art	LS	2.0%	\$	13,692,563.60	\$ 23,742,714.13
Roadway Lighting	LS	2.0%	\$	13,692,563.60	\$ 23,742,714.13
ROADWAY SUBTOTAL				\$ 722,282,729.71	\$ 1,252,428,170.12

IMPROVEMENT DESCRIPTION	UOM	TRANSIT		TOTAL COST (2024)	TOTAL COST (2040)
		QUANTITY			
2-Track, Bored Tunnel Subway	LF	5,332	\$	173,705,896.00	\$ 301,203,598.70
2-Track, Cut and Cover Subway	LF	38,785	\$	1,352,937,155.00	\$ 2,345,974,139.54
2-Track, Elevated Subway	LF	29,590	\$	605,497,045.71	\$ 1,049,923,424.42
2-Track, At Grade Subway	LF	3,889	\$	17,671,616.00	\$ 30,642,335.45
2-Track, Elevated Extension to MFL	LF	4,224	\$	85,341,028.85	\$ 147,980,152.65
MFL Junction @ FTC (Special Work and WYE)	EA	2	\$	2,000,000.00	\$ 3,467,972.08
Bridge Street Garage Demolition	LF	370	\$	396,640.00	\$ 687,768.22
Interlockings	EA	6	\$	40,800,000.00	\$ 70,746,630.43
BSS Terminal Yard Tracks	TF	8,000	\$	11,168,000.00	\$ 19,365,156.09
Junction @ Erie BSS	EA	2	\$	450,000.00	\$ 780,293.72
Yard Turnouts	EA	8	\$	1,376,000.00	\$ 2,385,964.79
Subgrade Stations	EA	8	\$	958,340,608.00	\$ 1,661,749,235.67
Elevated Stations	EA	4	\$	262,507,504.00	\$ 455,184,347.29
Fare Collection System @ Stations	EA	12	\$	45,297,456.00	\$ 78,545,156.34
Maintenance Facility	SF	30,000	\$	30,000,000.00	\$ 52,019,581.19
Vehicles	VEH	159	\$	818,787,831.00	\$ 1,419,766,668.54
MEP	LS	2.0%	\$	71,749,778.99	\$ 124,413,115.13
Transit Lighting	LS	3.0%	\$	107,624,668.49	\$ 186,619,672.70
Station Signage	LS	1.0%	\$	43,043,206.64	\$ 74,636,319.42
TRANSIT SUBTOTAL				\$ 4,628,694,434.67	\$ 8,026,091,532.36

Notes:

- Total Length of Roadway Improvements = 11.6 Miles
 - Old York Road to Southampton Road
- Total Length of Subway Improvements = 14.7 Miles
 - Broad and Erie to Neshaminy Mall
- Cost for elevated extension to Frankford Transportation Center included
- Cost includes subway extension from Southampton Road to Neshaminy Mall estimated at \$264,100,000.00 (2024).
- Inflation Rate = 3.5%
- See Definition of Alternatives Report for roadway and transit segmentation.
- ESTIMATE VARIABILITY: The costs shown in this estimate represent an estimate of probable costs prepared in good faith and with reasonable care. HNTB has no control over the costs of construction labor, materials, or equipment, nor over competitive bidding or negotiating methods and does not make any commitment or assume any duty to assure that bids or negotiated

PROJECT SUBTOTAL		\$ 5,350,977,164.38	\$ 9,278,519,702.48
Erosion & Sediment Control	5.00%	\$ 267,548,858.22	\$ 463,925,985.12
Maintenance and Protection of Traffic	5.00%	\$ 267,548,858.22	\$ 463,925,985.12
Mobilization	5.00%	\$ 267,548,858.22	\$ 463,925,985.12
Clearing and Grubbing	2.00%	\$ 107,019,543.29	\$ 185,570,394.05
SUBTOTAL		\$ 6,260,643,282.33	\$ 10,855,868,051.90
Preliminary Engineering	8.25%	\$ 516,503,070.79	\$ 895,609,114.28
Final Design	12.75%	\$ 798,232,018.50	\$ 1,384,123,176.62
PM/CA	13.25%	\$ 829,535,234.91	\$ 1,438,402,516.88
Insurance	2.00%	\$ 125,212,865.65	\$ 217,117,361.04
Other	1.00%	\$ 62,606,432.82	\$ 108,558,680.52
SUBTOTAL		\$ 8,592,732,904.99	\$ 14,899,678,901.23
Contingency	40.00%	\$ 3,437,093,162.00	\$ 5,959,871,560.49
TOTAL PROJECT COST		\$ 12,029,826,066.99	\$ 20,859,550,461.73

Total Roadway Length (FT)	61429.14	11.6
Inflation Rate	3.5%	

Project Information	
Project Name	Roosevelt Blvd
Job No.	
MPMS No.	

Roosevelt Blvd Cost Estimate - Partially Capped Expressway Items

Depressed Full Cap									
Layout									
Length (Ft)	20427.25	Travel Lane Width (Ft)	12	LT Shoulder Width	8	RT Shoulder Width (Ft)	10	Total Width	90.00
Length (Mile)	3.87	Number of Travel Lanes	4	Number of Shoulders	2	Number of Shoulders	2	Total Area (SY)	204,272.50
		Wall Thickness	2	Wall Offset	1	Top Slab Thickness	2.5	Excavation Depth	28
		Number of Walls	2	Wall Offset Multiplier	2	Bottom Slab Thickness	2.5	Total Area (CY)	1,906,543.33
		Tunnel Clearance	20	Center Wall Thickness	5	Clean Fill	3		
Items									
Name	Source and Assumptions			UOM	Unit Cost	Total Cost			
CLASS 3 EXCAVATION	PennDOT Standard Item 0204-0100			CY	\$ 50.00	\$ 95,327,200.00			
SELECT BACKFILL	PennDOT Standard Item 0205-0100			CY	\$ 21.00	\$ 5,179,461.00			
TEMPORARY EXCAVATION SUPPORT	PennDOT Special Item. Utilized PennDOT ECMS for price history.			SF	\$ 100.00	\$ 116,435,400.00			
CLASS AAAP CEMENT CONCRETE	PennDOT Standard Item 1001-1001			CY	\$ 1,545.00	\$ 474,863,475.00			
PLAIN CEMENT CONCRETE BASE COURSE, 10" DEPTH	PennDOT Standard Item 0301-0006			SY	\$ 115.00	\$ 21,925,325.00			
SUPERPAVE ASPHALT MIXTURE DESIGN, BINDER COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH	PennDOT Standard Item 0413-6055			SY	\$ 20.00	\$ 3,813,100.00			
SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-E	PennDOT Standard Item 0413-0297			SY	\$ 13.00	\$ 2,478,515.00			
ASPHALT TACK COAT (NTT/CNTT)	PennDOT Standard Item 0460-0003			SY	\$ 1.00	\$ 381,310.00			
MEMBRANE WATERPROOFING SYSTEM INSTALLED ON OTHER SURFACES	PennDOT Standard Item 0680-0121			SY	\$ 82.00	\$ 59,929,044.00			
6" STRUCTURE FOUNDATION DRAIN	PennDOT Standard Item 1001-0611			LF	\$ 23.00	\$ 2,818,972.00			
ARCHITECTURAL SURFACE TREATMENT	PennDOT Special Item. Utilized PennDOT ECMS for price history.			SY	\$ 210.00	\$ 1,634,180.00			
PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (PENETRATING SEALERS, REINFORCED CONCRETE SUBSTRUCTURE SURFACES)	PennDOT Standard Item 1019-0040			SY	\$ 10.00	\$ 907,880.00			
NO. 57 COARSE AGGREGATE	PennDOT Standard Item 0703-0025			CY	\$ 119.00	\$ 1,215,421.38			
CONCRETE MEDIAN BARRIER, F-SHAPE, 50" HEIGHT	PennDOT Standard Item 0623-0303			LF	\$ 150.00	\$ 12,256,350.00			
LONGITUDINAL PAVEMENT MARKINGS	6" wide lines for lane lines. PennDOT Standard Item 0960-0005			LF	\$ 1.25	\$ 153,204.38			
TRANSVERSE PAVEMENT MARKINGS	Assumed 20% of length per lane. PennDOT Standard item 0960-0021			LF	\$ 8.00	\$ 522,937.60			
PAVEMENT MARKING LEGENDS	2 legends spaced out every 1000'. PennDOT Standard Item 0960-0101.			EACH	\$ 285.00	\$ 46,574.13			
PERMANENT IMPACT ATTENUATING DEVICE, TYPE V, TEST LEVEL 3, MASH, WIDTHS LESS THAN OR EQUAL TO 36 INCHES	Spaced out 0.5 mile per direction. PennDOT Standard Item 0619-0744			EACH	\$ 38,000.00	\$ 588,057.20			
Total Cost (2024) \$ 800,476,406.68				Total Cost (2040) \$ 1,388,014,914.39					
Notes: Depressed expressway with fully capped section.									

Depressed Full Cap with Ramps

Layout									
Length (Ft)	4779.04	Travel Lane Width (Ft)	12	LT Shoulder Width	8	RT Shoulder Width (Ft)	10	Total Width	114.00
Length (Mile)	0.90512121	Number of Travel Lanes	6	Number of Shoulders	2	Number of Shoulders	2	Total Area (SY)	60,534.51
		Wall Thickness	2	Wall Offset	1	Top Slab Thickness	2.5	Excavation Depth	28
		Number of Walls	2	Wall Offset Multiplier	2	Bottom Slab Thickness	2.5	Total Area (CY)	564,988.73
		Tunnel Clearance	20	Center Wall Thickness	5	Clean Fill	3		

Items				
Name	Source and Assumptions	UOM	Unit Cost	Total Cost
CLASS 3 EXCAVATION	PennDOT Standard Item 0204-0100	CY	\$ 50.00	\$ 28,249,450.00
SELECT BACKFILL	PennDOT Standard Item 0205-0100	CY	\$ 21.00	\$ 1,479,387.00
TEMPORARY EXCAVATION SUPPORT	PennDOT Special Item. Utilized PennDOT ECMS for price history.	SF	\$ 100.00	\$ 27,240,600.00
CLASS AAAP CEMENT CONCRETE	PennDOT Standard Item 1001-1001	CY	\$ 1,545.00	\$ 202,367,190.00
PLAIN CEMENT CONCRETE BASE COURSE, 10" DEPTH	PennDOT Standard Item 0301-0006	SY	\$ 115.00	\$ 6,595,075.20
SUPERPAVE ASPHALT MIXTURE DESIGN, BINDER COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH	PennDOT Standard Item 0413-6055	SY	\$ 20.00	\$ 1,146,980.00
SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-E	PennDOT Standard Item 0413-0297	SY	\$ 13.00	\$ 745,537.00
ASPHALT TACK COAT (NTT/CNTT)	PennDOT Standard Item 0460-0003	SY	\$ 1.00	\$ 114,698.00
MEMBRANE WATERPROOFING SYSTEM INSTALLED ON OTHER SURFACES	PennDOT Standard Item 0680-0121	SY	\$ 82.00	\$ 17,155,712.00
6" STRUCTURE FOUNDATION DRAIN	PennDOT Standard Item 1001-0611	LF	\$ 23.00	\$ 659,525.00
ARCHITECTURAL SURFACE TREATMENT	PennDOT Special Item. Utilized PennDOT ECMS for price history.	SY	\$ 210.00	\$ 80,288,040.00
PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (PENETRATING SEALERS, REINFORCED CONCRETE SUBSTRUCTURE SURFACES)	PennDOT Standard Item 1019-0040	SY	\$ 10.00	\$ 212,410.00
NO. 57 COARSE AGGREGATE	PennDOT Standard Item 0703-0025	CY	\$ 119.00	\$ 284,352.88
CONCRETE MEDIAN BARRIER, F-SHAPE, 50" HEIGHT	PennDOT Standard Item 0623-0303	LF	\$ 150.00	\$ 2,867,550.00
LONGITUDINAL PAVEMENT MARKINGS	6" wide lines for lane lines. PennDOT Standard Item 0960-0005	LF	\$ 1.25	\$ 59,738.00
TRANSVERSE PAVEMENT MARKINGS	Assumed 20% of length per lane. PennDOT Standard item 0960-0021	LF	\$ 8.00	\$ 137,636.35
PAVEMENT MARKING LEGENDS	2 legends spaced out every 1000'. PennDOT Standard Item 0960-0101.	EACH	\$ 285.00	\$ 16,344.32
PERMANENT IMPACT ATTENUATING DEVICE, TYPE V, TEST LEVEL 3, MASH, WIDTHS LESS THAN OR EQUAL TO 36 INCHES	Spaced out 0.5 mile per direction. PennDOT Standard Item 0619-0744	EACH	\$ 38,000.00	\$ 137,578.42
Total Cost (2024)	\$ 369,757,804.17			
Total Cost (2040)	\$ 641,154,870.55			

Notes: Depressed expressway with fully capped section and on/off ramps.

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Partially Capped Expressway with At-Grade Crossing Intersections

Layout									
Length (Ft)	2122	Travel Lane Width (Ft)	12	LT Shoulder Width	8	RT Shoulder Width (Ft)	10	Headwall Thickness (FT)	6.5
Length (Mile)	0.401986742	Number of Travel Lanes	4	Number of Shoulders	2	Number of Shoulders	2	Total Width	90.00
		Wall Thickness	2	Wall Offset	1	Top Slab Thickness (FT)	2.5	Total Area (SY)	21,224.90
		Number of Walls	2	Wall Offset Multiplier	2	Bottom Slab Thickness (FT)	2.5	Excavation Depth	28
Deck Thickness (FT)	1	Tunnel Clearance	20	Center Wall Thickness	5	Clean Fill	3	Total Area (CY)	198,099.07

Items				
Name	Source and Assumptions	UOM	Unit Cost	Total Cost
CLASS 3 EXCAVATION	PennDOT Standard Item 0204-0100	CY	\$ 50.00	\$ 9,905,000.00
SELECT BACKFILL	PennDOT Standard Item 0205-0100	CY	\$ 21.00	\$ 538,188.00
TEMPORARY EXCAVATION SUPPORT	PennDOT Special Item. Utilized PennDOT ECMS for price history.	SF	\$ 100.00	\$ 12,098,200.00
CLASS AAAP CEMENT CONCRETE	PennDOT Standard Item 1001-1001	CY	\$ 1,545.00	\$ 89,560,560.00
PLAIN CEMENT CONCRETE BASE COURSE, 10" DEPTH	PennDOT Standard Item 0301-0006	SY	\$ 115.00	\$ 2,278,150.00
SUPERPAVE ASPHALT MIXTURE DESIGN, BINDER COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH	PennDOT Standard Item 0413-6055	SY	\$ 20.00	\$ 396,200.00
SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-E	PennDOT Standard Item 0413-0297	SY	\$ 13.00	\$ 257,530.00
ASPHALT TACK COAT (NTT/CNTT)	PennDOT Standard Item 0460-0003	SY	\$ 1.00	\$ 39,620.00
MEMBRANE WATERPROOFING SYSTEM INSTALLED ON OTHER SURFACES	PennDOT Standard Item 0680-0121	SY	\$ 82.00	\$ 6,226,916.00
6" STRUCTURE FOUNDATION DRAIN	PennDOT Standard Item 1001-0611	LF	\$ 23.00	\$ 292,905.00
ARCHITECTURAL SURFACE TREATMENT	PennDOT Special Item. Utilized PennDOT ECMS for price history.	SY	\$ 210.00	\$ 35,658,000.00
PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (PENETRATING SEALERS, REINFORCED CONCRETE SUBSTRUCTURE SURFACES)	PennDOT Standard Item 1019-0040	SY	\$ 10.00	\$ 101,410.00
NO. 57 COARSE AGGREGATE	PennDOT Standard Item 0703-0025	CY	\$ 119.00	\$ 126,288.16
CONCRETE MEDIAN BARRIER, F-SHAPE, 50" HEIGHT	PennDOT Standard Item 0623-0303	LF	\$ 150.00	\$ 1,273,500.00
LONGITUDINAL PAVEMENT MARKINGS	6" wide lines for lane lines. PennDOT Standard Item 0960-0005	LF	\$ 1.25	\$ 15,918.68
TRANSVERSE PAVEMENT MARKINGS	Assumed 20% of length per lane. PennDOT Standard item 0960-0021	LF	\$ 8.00	\$ 54,335.74
PAVEMENT MARKING LEGENDS	2 legends spaced out every 1000'. PennDOT Standard Item 0960-0101.	EACH	\$ 285.00	\$ 4,839.28
PERMANENT IMPACT ATTENUATING DEVICE, TYPE V, TEST LEVEL 3, MASH, WIDTHS LESS THAN OR EQUAL TO 36 INCHES	Spaced out 0.5 mile per direction. PennDOT Standard Item 0619-0744	EACH	\$ 38,000.00	\$ 61,101.98
Total Cost (2024)	\$ 158,888,662.84			
Total Cost (2040)	\$ 275,510,723.24			

Notes: Depressed expressway with at-grade intersections crossing. Cap thickness is increased to account for crossing traffic and at-grade intersection.

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Depressed Partial Cap

Layout									
Length (Ft)	11455.09	Travel Lane Width (Ft)	12	LT Shoulder Width	8	RT Shoulder Width (Ft)	10	Depth to Footing	3
Length (Mile)	2.169524621	Number of Travel Lanes	4	Number of Shoulders	2	Number of Shoulders	2	Total Width	116.00
		Footing Width (FT)	15	Wall Offset	1	Footing Thickness (FT)	2.5	Total Area (SY)	147,643.38
		Number of Walls	2	Wall Offset Multiplier	2	Number of Footings	2	Excavation Depth	28.5
Height of Vertical Face (FT)	3.5	Tunnel Clearance	20	Width of Excavation (FT)	10	Toe Width	4	Total Area (CY)	1,402,612.13

Items				
Name	Source and Assumptions	UOM	Unit Cost	Total Cost
CLASS 3 EXCAVATION	PennDOT Standard Item 0204-0100	CY	\$ 50.00	\$ 48,344,750.00
SELECT BACKFILL	PennDOT Standard Item 0205-0100	CY	\$ 21.00	\$ 5,951,568.00
TEMPORARY EXCAVATION SUPPORT	PennDOT Special Item. Utilized PennDOT ECMS for price history.	SF	\$ 100.00	\$ 65,294,100.00
CLASS AAAP CEMENT CONCRETE	PennDOT Standard Item 1001-1001	CY	\$ 1,545.00	\$ 126,181,695.00
PLAIN CEMENT CONCRETE BASE COURSE, 10" DEPTH	PennDOT Standard Item 0301-0006	SY	\$ 115.00	\$ 12,295,225.00
SUPERPAVE ASPHALT MIXTURE DESIGN, BINDER COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH	PennDOT Standard Item 0413-6055	SY	\$ 20.00	\$ 2,138,300.00
SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-E	PennDOT Standard Item 0413-0297	SY	\$ 13.00	\$ 1,389,895.00
ASPHALT TACK COAT (NTT/CNTT)	PennDOT Standard Item 0460-0003	SY	\$ 1.00	\$ 213,830.00
MEMBRANE WATERPROOFING SYSTEM INSTALLED ON OTHER SURFACES	PennDOT Standard Item 0680-0121	SY	\$ 82.00	\$ 17,847,054.00
6" STRUCTURE FOUNDATION DRAIN	PennDOT Standard Item 1001-0611	LF	\$ 23.00	\$ 1,580,813.00
ARCHITECTURAL SURFACE TREATMENT	PennDOT Special Item. Utilized PennDOT ECMS for price history.	SY	\$ 210.00	\$ 113,061,900.00
PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (PENETRATING SEALERS, REINFORCED CONCRETE SUBSTRUCTURE SURFACES)	PennDOT Standard Item 1019-0040	SY	\$ 10.00	\$ 598,220.00
NO. 57 COARSE AGGREGATE	PennDOT Standard Item 0703-0025	CY	\$ 119.00	\$ 681,577.86
CONCRETE MEDIAN BARRIER, F-SHAPE, 50" HEIGHT	PennDOT Standard Item 0623-0303	LF	\$ 150.00	\$ 6,873,150.00
LONGITUDINAL PAVEMENT MARKINGS	6" wide lines for lane lines. PennDOT Standard Item 0960-0005	LF	\$ 1.25	\$ 85,913.17
TRANSVERSE PAVEMENT MARKINGS	Assumed 20% of length per lane. PennDOT Standard item 0960-0021	LF	\$ 8.00	\$ 293,250.30
PAVEMENT MARKING LEGENDS	2 legends spaced out every 1000'. PennDOT Standard Item 0960-0101.	EACH	\$ 285.00	\$ 26,117.61
PERMANENT IMPACT ATTENUATING DEVICE, TYPE V, TEST LEVEL 3, MASH, WIDTHS LESS THAN OR EQUAL TO 36 INCHES	Spaced out 0.5 mile per direction. PennDOT Standard Item 0619-0744	EACH	\$ 38,000.00	\$ 329,767.74
Total Cost (2024)	\$ 403,187,126.68			
Total Cost (2040)	\$ 699,120,849.10			

Notes: Depressed roadway section with no capped section.

Depressed Partial Cap with Ramps

Layout									
Length (Ft)	4778.54	Travel Lane Width (Ft)	12	LT Shoulder Width	8	RT Shoulder Width (Ft)	10	Depth to Footing	3
Length (Mile)	0.905026515	Number of Travel Lanes	6	Number of Shoulders LT	2	Number of Shoulders	2	Total Width	140.00
		Footing Width (FT)	15	Wall Offset	1	Footing Thickness (FT)	2.5	Total Area (SY)	74,332.84
		Number of Walls	2	Wall Offset Multiplier	2	Number of Footings	2	Excavation Depth	28.5
Height of Vertical Face (FT)	3.5	Tunnel Clearance	20	Width of Excavation (FT)	10	Toe Width	4	Total Area (CY)	706,162.02
Items									
Name	Source and Assumptions					UOM	Unit Cost	Total Cost	
CLASS 3 EXCAVATION	PennDOT Standard Item 0204-0100					CY	\$ 50.00	\$ 25,813,000.00	
SELECT BACKFILL	PennDOT Standard Item 0205-0100					CY	\$ 21.00	\$ 2,623,950.00	
TEMPORARY EXCAVATION SUPPORT	PennDOT Special Item. Utilized PennDOT ECMS for price history.					SF	\$ 100.00	\$ 27,237,700.00	
CLASS AAAP CEMENT CONCRETE	PennDOT Standard Item 1001-1001					CY	\$ 1,545.00	\$ 52,638,150.00	
PLAIN CEMENT CONCRETE BASE COURSE, 10" DEPTH	PennDOT Standard Item 0301-0006					SY	\$ 115.00	\$ 6,594,445.00	
SUPERPAVE ASPHALT MIXTURE DESIGN, BINDER COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH	PennDOT Standard Item 0413-6055					SY	\$ 20.00	\$ 1,146,860.00	
SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-E	PennDOT Standard Item 0413-0297					SY	\$ 13.00	\$ 745,459.00	
ASPHALT TACK COAT (NTT/CNTT)	PennDOT Standard Item 0460-0003					SY	\$ 1.00	\$ 114,686.00	
MEMBRANE WATERPROOFING SYSTEM INSTALLED ON OTHER SURFACES	PennDOT Standard Item 0680-0121					SY	\$ 82.00	\$ 8,489,952.00	
6" STRUCTURE FOUNDATION DRAIN	PennDOT Standard Item 1001-0611					LF	\$ 23.00	\$ 659,456.00	
ARCHITECTURAL SURFACE TREATMENT	PennDOT Special Item. Utilized PennDOT ECMS for price history.					SY	\$ 210.00	\$ 47,164,320.00	
PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (PENETRATING SEALERS, REINFORCED CONCRETE SUBSTRUCTURE SURFACES)	PennDOT Standard Item 1019-0040					SY	\$ 10.00	\$ 249,550.00	
NO. 57 COARSE AGGREGATE	PennDOT Standard Item 0703-0025					CY	\$ 119.00	\$ 284,323.13	
CONCRETE MEDIAN BARRIER, F-SHAPE, 50" HEIGHT	PennDOT Standard Item 0623-0303					LF	\$ 150.00	\$ 2,867,250.00	
LONGITUDINAL PAVEMENT MARKINGS	6" wide lines for lane lines. PennDOT Standard Item 0960-0005					LF	\$ 1.25	\$ 59,731.75	
TRANSVERSE PAVEMENT MARKINGS	Assumed 20% of length per lane. PennDOT Standard item 0960-0021					LF	\$ 8.00	\$ 137,621.95	
PAVEMENT MARKING LEGENDS	2 legends spaced out every 1000'. PennDOT Standard Item 0960-0101.					EACH	\$ 285.00	\$ 16,342.61	
PERMANENT IMPACT ATTENUATING DEVICE, TYPE V, TEST LEVEL 3, MASH, WIDTHS LESS THAN OR EQUAL TO 36 INCHES	Spaced out 0.5 mile per direction. PennDOT Standard Item 0619-0744					EACH	\$ 38,000.00	\$ 137,564.03	
Total Cost (2024) \$ 176,980,361.47				Total Cost (2040) \$ 306,881,476.11					
Notes: Depressed expressway with no capped section and on/off ramps.									

Bike Lanes

Layout									
Length (Ft)	61429.14	Width (Ft)	5.5	Number of Lanes	4	Excavation Depth (Ft)	1.04	Total Area	1,351,441.08
Items									
Name	Source and Assumptions					UOM	Unit Cost	Total Cost	
SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64S-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-E	PennDOT Standard Item 0313-0424					SY	\$ 11.00	\$ 1,651,761.32	
SUPERPAVE ASPHALT MIXTURE DESIGN, BASE COURSE, PG 64S-22, 0.3 TO < 3 MILLION ESALS, 25.0 MM MIX, 5" DEPTH	PennDOT Standard Item 0413-0244					SY	\$ 31.00	\$ 4,654,963.72	
SUBBASE 6" DEPTH (NO.2A)	PennDOT Standard Item 0350-0106					SY	\$ 16.50	\$ 2,477,641.98	
CLASS 1 EXCAVATION	PennDOT Standard Item 0203-0001					CY	\$ 42.00	\$ 2,189,835.08	
PLAIN CEMENT CONCRETE CURB, 8" HEIGHT	PennDOT Standard Item 0630-0041					LF	\$ 46.00	\$ 11,302,961.76	
LONGITUDINAL PAVEMENT MARKINGS	6" wide lines for lane lines. PennDOT Standard Item 0960-0005					LF	\$ 1.25	\$ 153,572.85	
GREEN BIKE LANE PAVEMENT MARKINGS	PennDOT Special Item. Utilized PennDOT ECMS for price history.					SF	\$ 11.25	\$ 15,203,712.15	
PAVEMENT MARKING LEGENDS	2 legends spaced out every 1000'. PennDOT Standard Item 0960-0101.					EACH	\$ 285.00	\$ 140,058.44	
Total Cost (2024) \$ 37,774,507.30				Total Cost (2040) \$ 65,500,468.32					
Notes: At-Grade bike lanes.									

Sidewalk

Layout									
Length (Ft)	61429.14	Width (Ft)	10	Number of Lanes	6	Excavation Depth (Ft)	0.83	Total Area	3,685,748.40
Items									
Name	Source and Assumptions					UOM	Unit Cost	Total Cost	
CEMENT CONCRETE SIDEWALK	PennDOT Standard Item 0676-0001					SY	\$ 140.00	\$ 57,333,864.00	
CLASS 1 EXCAVATION	PennDOT Standard Item 0203-0001					CY	\$ 42.00	\$ 4,777,822.00	
Total Cost (2024) \$ 62,111,686.00				Total Cost (2040) \$ 107,700,796.43					
Notes:									

Travel Lanes (Local Lanes)									
Layout									
Length (Ft)	61429.14	Width (Ft)	12	Number of Lanes	4	Excavation Depth (Ft)	1.83	Total Area	2,948,598.72
Items									
Name	Source and Assumptions			UOM	Unit Cost	Total Cost			
GEOTEXTILE, CLASS 4, TYPE A	PennDOT Standard Item 0212-0014			SY	\$ 2.70	\$ 884,579.62			
SUBBASE 8" DEPTH (NO. 2A)	PennDOT Standard Item 0350-0108			SY	\$ 22.00	\$ 7,207,685.76			
Plain Cement Concrete Base Course, 10" Depth	PennDOT Standard Item 0301-0006			SY	\$ 115.00	\$ 37,676,539.20			
SUPERPAVE ASPHALT MIXTURE DESIGN, BINDER COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH	PennDOT Standard Item 0413-6055			SY	\$ 20.00	\$ 6,552,441.60			
SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-E	PennDOT Standard Item 0413-0297			SY	\$ 13.00	\$ 4,259,087.04			
ASPHALT TACK COAT (NTT/CNTT)	PennDOT Standard Item 0460-0003			SY	\$ 1.00	\$ 655,244.16			
6" PAVEMENT BASE DRAIN	PennDOT Standard Item 0610-7002			LF	\$ 20.00	\$ 4,914,331.20			
GEOTEXTILE, CLASS 1	PennDOT Standard Item 0212-0001			LF	\$ 1.60	\$ 393,146.50			
NO. 8 COARSE AGGREGATE	PennDOT Standard Item 0703-0022			CY	\$ 60.00	\$ 378,151.97			
CLASS 1 EXCAVATION	PennDOT Standard Item 0203-0001			CY	\$ 42.00	\$ 8,408,966.72			
PLAIN CEMENT CONCRETE CURB, 8" HEIGHT	PennDOT Standard Item 0630-0041			LF	\$ 46.00	\$ 11,302,961.76			
LONGITUDINAL PAVEMENT MARKINGS	6" wide lines for lane lines. PennDOT Standard Item 0960-0005			LF	\$ 1.25	\$ 460,718.55			
TRANSVERSE PAVEMENT MARKINGS	Assumed 20% of length per lane. PennDOT Standard item 0960-0021			LF	\$ 8.00	\$ 1,572,585.98			
PAVEMENT MARKING LEGENDS	2 legends spaced out every 1000'. PennDOT Standard Item 0960-0101.			EACH	\$ 285.00	\$ 140,058.44			
TYPE 31-S GUIDE RAIL	Assumed 20% of corridor has guide rail. PennDOT Standard Item 0620-1600			LF	\$ 38.00	\$ 1,867,445.86			
PERMANENT IMPACT ATTENUATING DEVICE, TYPE II, TEST LEVEL 3, TANGENT (MASH)	Spaced out 0.5 mile per direction. PennDOT Standard Item 0619-0459			EACH	\$ 4,200.00	\$ 2,064,019.10			
Total Cost (2024) \$ 88,737,963.45					Total Cost (2040) \$ 153,870,389.83				
Notes: At-Grade four local lanes.									

Travel Lanes (At-Grade)									
Layout									
Length (Ft)	19989.22	Width (Ft)	12	Number of Lanes	4	Excavation Depth (Ft)	1.83	Total Area	959,482.56
Items									
Name	Source and Assumptions			UOM	Unit Cost	Total Cost			
GEOTEXTILE, CLASS 4, TYPE A	PennDOT Standard Item 0212-0014			SY	\$ 2.70	\$ 287,844.77			
SUBBASE 8" DEPTH (NO. 2A)	PennDOT Standard Item 0350-0108			SY	\$ 22.00	\$ 2,345,401.81			
Plain Cement Concrete Base Course, 10" Depth	PennDOT Standard Item 0301-0006			SY	\$ 115.00	\$ 12,260,054.93			
SUPERPAVE ASPHALT MIXTURE DESIGN, BINDER COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH	PennDOT Standard Item 0413-6055			SY	\$ 20.00	\$ 2,132,183.47			
SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-E	PennDOT Standard Item 0413-0297			SY	\$ 13.00	\$ 1,385,919.25			
ASPHALT TACK COAT (NTT/CNTT)	PennDOT Standard Item 0460-0003			SY	\$ 1.00	\$ 213,218.35			
6" PAVEMENT BASE DRAIN	Assumed 4 locations of PDB. PennDOT Standard Item 0610-7002			LF	\$ 20.00	\$ 1,599,137.60			
GEOTEXTILE, CLASS 1	PennDOT Standard Item 0212-0001			LF	\$ 1.60	\$ 127,931.01			
NO. 8 COARSE AGGREGATE	PennDOT Standard Item 0703-0022			CY	\$ 60.00	\$ 123,051.75			
CLASS 1 EXCAVATION	PennDOT Standard Item 0203-0001			CY	\$ 42.00	\$ 2,736,302.12			
PLAIN CEMENT CONCRETE CURB, 8" HEIGHT	Assumed 4 locations of curb. PennDOT Standard Item 0630-0041			LF	\$ 46.00	\$ 3,678,016.48			
LONGITUDINAL PAVEMENT MARKINGS	6" wide lines for lane lines. PennDOT Standard Item 0960-0005			LF	\$ 1.25	\$ 149,919.15			
TRANSVERSE PAVEMENT MARKINGS	Assumed 20% of length per lane. PennDOT Standard item 0960-0021			LF	\$ 8.00	\$ 511,724.03			
PAVEMENT MARKING LEGENDS	2 legends spaced out every 1000'. PennDOT Standard Item 0960-0101.			EACH	\$ 285.00	\$ 45,575.42			
TYPE 31-S GUIDE RAIL	Assumed 20% of corridor has guide rail. PennDOT Standard Item 0620-1600			LF	\$ 38.00	\$ 607,672.29			
PERMANENT IMPACT ATTENUATING DEVICE, TYPE II, TEST LEVEL 3, TANGENT (MASH)	Spaced out 0.5 mile per direction. PennDOT Standard Item 0619-0459			EACH	\$ 4,200.00	\$ 671,637.79			
Total Cost (2024) \$ 28,875,590.21					Total Cost (2040) \$ 50,069,870.32				
Notes: At-grade expressway lanes for creek crossings.									

Median Landscaping									
Layout									
Length (Ft)	27328.78	Width (Ft)	146	Number of Lanes	1	Excavation Depth (Ft)	0.33	Total Area	3,990,001.88
Items									
Name	Source and Assumptions				UOM	Unit Cost	Total Cost		
TOPSOIL FURNISHED AND PLACED	PennDOT Standard Item 0802-0001				CY	\$ 89.00	\$ 4,384,076.14		
SEEDING AND SOIL SUPPLEMENTS - FORMULA B RESIDENTIAL MIX	Type B Seeding 42 LB/1000 sy. PennDOT standard item 0804-0036.				LB	\$ 18.00	\$ 335,160.16		
CLASS 1 EXCAVATION	PennDOT Standard Item 0203-0001				CY	\$ 42.00	\$ 2,068,889.86		
Total Cost (2024) \$		6,788,126.16		Total Cost (2040) \$		11,770,516.00			
Notes: Width is the total width of all median areas.									

Misc										
Layout										
Length (Ft)	61429.14								Total Area	-
Items										
Name	Source and Assumptions				UOM	Unit Cost	Total Cost			
Utilities Relocation	FTA Database				LF	\$ 1,622.00	\$ 99,638,065.08			
Total Cost (2024) \$		99,638,065.08		Total Cost (2040) \$		172,771,013.88				
Notes:										

DRAINAGE									
Layout									
Local Lane Length	61429.14	Local Lanes	4	2-way Cycle Track Lanes	4	Type C Spacing	150	Type C Inlets	4,876.00
At Grade Length	19989.22	At Grade Lanes	4	Depth of Swale	2	Side Slope (H:V)	3	Swale Excavation Area	16.00
Median Length	27328.78	Medians	5	RECP Area	3,990,001.88	ECMB Area (SY)	443,333.54		
	Swale Bottom Width	2	Length of Pipe	708033.9	Type M Inlets	684.00			
	Type M Spacing	200	Items						
Name	Source and Assumptions				Quantity	UOM	Unit Cost	Total Cost	
CLASS 2 EXCAVATION	PennDOT Standard item 0204-0001				80,974.16	CY	\$ 100.00	\$ 8,097,416.30	
TYPE C INLET	PennDOT Standard item 0605-5720				4,876.00	SET	\$ 2,000.00	\$ 9,752,000.00	
TYPE M INLET	PennDOT Standard item 0605-2780				684.00	SET	\$ 1,800.00	\$ 1,231,200.00	
STANDARD INLET BOX, HEIGHT <= 10'	PennDOT Standard item 0605-2850				5,560.00	EA	\$ 3,250.00	\$ 18,070,000.00	
18" REINFORCED CONCRETE PIPE, TYPE A, 100 YR DESIGN LIFE	PennDOT Standard item 0601-7014				708,034.00	LF	\$ 215.00	\$ 152,227,310.00	
RECP	PennDOT Standard item 0806-0121				443,333.54	SY	\$ 2.75	\$ 1,219,167.24	
Total Cost (2024) \$		190,597,093.54		Total Cost (2040) \$		330,492,699.43			
Notes:									

Existing Signal Upgrades and Retimings									
Layout									
Length (Ft)	N/A	Width (Ft)	N/A	Number of Intersections	54.00	Excavation Depth (Ft)	N/A	Total Area	N/A
Items									
Name					UOM	Unit Cost	Total Cost		
Intersection Signalization					EACH	\$ 500,000.00	\$ 27,000,000.00		
Total Cost (2024) \$		27,000,000.00		Total Cost (2040) \$		46,817,623.08			
Notes: Cost per intersection = \$250,000.00. Each intersection to acts as 2 intersections to get cost of \$500,000.00									

Project Information	
Project Name	Roosevelt Blvd
Job No.	
MPMS No.	

Total Roadway Length (FT)	61429.14	11.6
Inflation Rate	3.5%	

Roosevelt Blvd Cost Estimate - Neighborhood Blvd Items

Bike Lanes										
Layout										
Length (Ft)	61429.14	Width (Ft)	5.5	Number of Lanes	4	Excavation Depth (Ft)	1.04	Total Area (SF)	1,351,441.08	
Items										
Name	Source and Assumptions			UOM	Unit Cost	Total Cost				
SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64S-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-E	PennDOT Standard Item 0313-0424			SY	\$ 11.00	\$ 1,651,761.32				
SUPERPAVE ASPHALT MIXTURE DESIGN, BASE COURSE, PG 64S-22, 0.3 TO < 3 MILLION ESALS, 25.0 MM MIX, 5" DEPTH	PennDOT Standard Item 0413-0244			SY	\$ 31.00	\$ 4,654,963.72				
SUBBASE 6" DEPTH (NO.2A)	PennDOT Standard Item 0350-0106			SY	\$ 16.50	\$ 2,477,641.98				
CLASS 1 EXCAVATION	PennDOT Standard Item 0203-0001			CY	\$ 42.00	\$ 2,189,835.08				
PLAIN CEMENT CONCRETE CURB, 8" HEIGHT	PennDOT Standard Item 0630-0041			LF	\$ 46.00	\$ 11,302,961.76				
LONGITUDINAL PAVEMENT MARKINGS	6" wide lines for lane lines. PennDOT Standard Item 0960-0005			LF	\$ 1.25	\$ 153,572.85				
GREEN BIKE LANE PAVEMENT MARKINGS	PennDOT Special Item. Utilized PennDOT ECMS for price history.			SF	\$ 11.25	\$ 15,203,712.15				
PAVEMENT MARKING LEGENDS	2 legends spaced out every 1000'. PennDOT Standard Item 0960-0101.			EACH	\$ 285.00	\$ 140,058.44				
Total Cost (2024)					\$	37,774,507.30	Total Cost (2040)		\$	65,500,468.32
Notes: At-Grade bike lanes.										

Sidewalk										
Layout										
Length (Ft)	61429.14	Width (Ft)	28	Number of Lanes	2	Excavation Depth (Ft)	0.83	Total Area (SF)	3,440,031.84	
Items										
Name	Source and Assumptions			UOM	Unit Cost	Total Cost				
CEMENT CONCRETE SIDEWALK	PennDOT Standard Item 0676-0001			SY	\$ 140.00	\$ 53,511,606.40				
CLASS 1 EXCAVATION	PennDOT Standard Item 0203-0001			CY	\$ 42.00	\$ 4,459,300.53				
Total Cost (2024)					\$	57,970,906.93	Total Cost (2040)		\$	100,520,743.34
Notes:										

Travel Lanes										
Layout										
Length (Ft)	61429.14	Width (Ft)	12	Number of Lanes	8	Excavation Depth (Ft)	1.83	Total Area (SF)	5,897,197.44	
Items										
Name	Source and Assumptions			UOM	Unit Cost	Total Cost				
GEOTEXTILE, CLASS 4, TYPE A	PennDOT Standard Item 0212-0014			SY	\$ 2.70	\$ 1,769,159.23				
SUBBASE 8" DEPTH (NO. 2A)	PennDOT Standard Item 0350-0108			SY	\$ 22.00	\$ 14,415,371.52				
Plain Cement Concrete Base Course, 10" Depth	PennDOT Standard Item 0301-0006			SY	\$ 115.00	\$ 75,353,078.40				
SUPERPAVE ASPHALT MIXTURE DESIGN, BINDER COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH	PennDOT Standard Item 0413-6055			SY	\$ 20.00	\$ 13,104,883.20				
SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-E	PennDOT Standard Item 0413-0297			SY	\$ 13.00	\$ 8,518,174.08				
ASPHALT TACK COAT (NTT/CNTT)	PennDOT Standard Item 0460-0003			SY	\$ 1.00	\$ 1,310,488.32				
6" PAVEMENT BASE DRAIN	Assumed 8 locations of PBD. PennDOT Standard Item 0610-7002			LF	\$ 20.00	\$ 9,828,662.40				
GEOTEXTILE, CLASS 1	PennDOT Standard Item 0212-0001			LF	\$ 1.60	\$ 786,292.99				
NO. 8 COARSE AGGREGATE	PennDOT Standard Item 0703-0022			CY	\$ 60.00	\$ 756,303.94				
CLASS 1 EXCAVATION	PennDOT Standard Item 0203-0001			CY	\$ 42.00	\$ 16,817,933.44				
PLAIN CEMENT CONCRETE CURB, 8" HEIGHT	Assumed 8 locations of curb. PennDOT Standard Item 0630-0041			LF	\$ 46.00	\$ 22,605,923.52				
LONGITUDINAL PAVEMENT MARKINGS	6" wide lines for lane lines. PennDOT Standard Item 0960-0005			LF	\$ 1.25	\$ 921,437.10				
TRANSVERSE PAVEMENT MARKINGS	Assumed 20% of length per lane. PennDOT Standard Item 0960-0021			LF	\$ 8.00	\$ 1,965,732.48				
PAVEMENT MARKING LEGENDS	2 legends spaced out every 1000'. PennDOT Standard Item 0960-0101.			EACH	\$ 285.00	\$ 280,116.88				
TYPE 31-S GUIDE RAIL	Assumed 20% of corridor has guide rail. PennDOT Standard Item 0620-1600			LF	\$ 38.00	\$ 3,734,891.71				
PERMANENT IMPACT ATTENUATING DEVICE, TYPE II, TEST LEVEL 3, TANGENT (MASH)	Spaced out 0.5 mile per direction. PennDOT Standard Item 0619-0459			EACH	\$ 4,200.00	\$ 4,128,038.21				
Total Cost (2024)					\$	176,296,487.42	Total Cost (2040)		\$	305,695,648.06
Notes:										

Median Landscaping

Layout									
Length (Ft)	61429.14	Width (Ft)	110	Number of Lanes	1	Excavation Depth (Ft)	0.33	Total Area (SF)	6,757,205.40
Items									
Name	Source and Assumptions				UOM	Unit Cost	Total Cost		
TOPSOIL FURNISHED AND PLACED	PennDOT Standard Item 0802-0001				CY	\$ 89.00	\$ 7,424,583.71		
SEEDING AND SOIL SUPPLEMENTS - FORMULA B RESIDENTIAL MIX	Type B Seeding 42 LB/1000 sy. PennDOT standard item 0804-0036.				LB	\$ 18.00	\$ 567,605.25		
CLASS 1 EXCAVATION	PennDOT Standard Item 0203-0001				CY	\$ 42.00	\$ 3,503,736.13		
Total Cost (2024) \$ 11,495,925.10					Total Cost (2040) \$ 19,933,773.63				
Notes: Width is the total width of all median areas.									

Signalized Intersections									
Layout									
Length (Ft)	N/A	Width (Ft)	N/A	Number of Intersections	29.00	Excavation Depth (Ft)	N/A	Total Area	N/A
Items									
Name	Source and Assumptions				UOM	Unit Cost	Total Cost		
Intersection Signalization	FTA Database				EACH	\$ 500,000.00	14500000		
Total Cost (2024) \$ 14,500,000.00					Total Cost (2040) \$ 25,142,797.58				
Notes: Cost per intersection = \$250,000.00. Each intersection to acts as 2 intersections to get cost of \$500,000.00									

Misc									
Layout									
Length (Ft)	61429.14							Total Area	-
Items									
Name	Source and Assumptions				UOM	Unit Cost	Total Cost		
Utilities Relocation	FTA Database				LF	\$ 1,622.00	\$ 99,638,065.08		
Total Cost (2024) \$ 99,638,065.08					Total Cost (2040) \$ 172,771,013.88				
Notes:									

DRAINAGE									
Layout									
Local Lane Length	61429.14	Lanes	8	2-way Cycle Track Lanes	4	Type C Spacing	150	Type C Inlets	4,915.00
Median Length	61429.14	Medians*	4	Depth of Swale	2	Side Slope (H:V)	3	Swale Excavation (CY)	145,609.81
		Swale Bottom Width	2	RECP Area	6,757,205.40	Swale Excavation Area (SF)	16.00	ECMB Area (SY)	750,800.60
		Type M Spacing	200	Length of Pipe	982866.24			Type M Inlets	1,229.00
Items									
Name	Source and Assumptions				Quantity	UOM	Unit Cost	Total Cost	
CLASS 2 EXCAVATION	PennDOT Standard item 0204-0001				145,610	CY	\$ 100.00	\$ 14,560,981.33	
TYPE C INLET	PennDOT Standard item 0605-5720				4,915	SET	\$ 2,000.00	\$ 9,830,000.00	
TYPE M INLET	PennDOT Standard item 0605-2780				1,229	SET	\$ 1,800.00	\$ 2,212,200.00	
STANDARD INLET BOX, HEIGHT <= 10'	PennDOT Standard item 0605-2850				6,144	EA	\$ 3,250.00	\$ 19,968,000.00	
18" REINFORCED CONCRETE PIPE, TYPE A, 100 YR DESIGN LIFE	PennDOT Standard item 0601-7014				982,867	LF	\$ 215.00	\$ 211,316,405.00	
RECP	PennDOT Standard item 0806-0121				750,801	SY	\$ 2.75	\$ 2,064,701.65	
Total Cost (2024) \$ 259,952,287.98					Total Cost (2040) \$ 450,753,638.38				
Notes: *Assumption that only medians wider than 16' would receive a swale.									

Existing Signal Upgrades and Retimings									
Layout									
Length (Ft)	N/A	Width (Ft)	N/A	Number of Intersections	54.00	Excavation Depth (Ft)	N/A	Total Area	N/A
Items									
Name	Source and Assumptions				UOM	Unit Cost	Total Cost		
Intersection Signalization	FTA Database				EACH	\$ 500,000.00	27000000		
Total Cost (2024) \$ 27,000,000.00					Total Cost (2040) \$ 46,817,623.08				
Notes: Cost per intersection = \$250,000.00. Each intersection to acts as 2 intersections to get cost of \$500,000.00									

Project Information	
Project Name	Roosevelt Blvd
Job No.	
MPMS No.	

Total Transit	97592.00	
Length (FT)	18.5	
Inflation Rate	3.5%	

Roosevelt Blvd Cost Estimate - LRT Items

Guideway - Aerial					
Layout				Length (Ft)	29570.00
Items					
Name	Source and Assumptions	UOM	Unit Cost	Total Cost	
Aerial Guideway	FTA Database: foundation excavation; guideway structures including caissons, columns, bridges, viaducts, cross-overs, fly-overs	LF	\$ 17,323.00	\$ 512,241,110.00	
Ballastless Track	FTA Database: Include rails, connectors, DF	TF	\$ 1,146.00	\$ 67,774,440.00	
OCS	FTA Database: Catenary	TF	\$ 462.00	\$ 13,661,340.00	
Communications	FTA Database: Wired	TF	\$ 373.00	\$ 11,029,610.00	
Signals	FTA Database: Wayside	TF	\$ 743.00	\$ 21,970,510.00	
Substations	FTA Database: Traction Power Supply	TF	\$ 588.00	\$ 17,387,160.00	
Total Cost (2024) \$ 644,064,170.00		Total Cost (2040) \$ 1,116,798,279.53			
Notes:					

Guideway - At-grade in mixed traffic					
Layout				Length (Ft)	28387.00
Items					
Name	Source and Assumptions	UOM	Unit Cost	Total Cost	
Concrete Encasement and steel ties	FTA Database	LF	\$ 2,691.00	\$ 152,778,834.00	
Embedded Track	FTA Database: Include rails, connectors, DF	TF	\$ 544.00	\$ 30,885,056.00	
OCS	FTA Database: Catenary	TF	\$ 462.00	\$ 13,114,794.00	
Communications	FTA Database: Wired	TF	\$ 373.00	\$ 10,588,351.00	
Signals	FTA Database: Wayside	TF	\$ 743.00	\$ 21,091,541.00	
Substations	FTA Database: Traction Power Supply	LF	\$ 588.00	\$ 16,691,556.00	
Total Cost (2024) \$ 245,150,132.00		Total Cost (2040) \$ 425,086,906.55			
Notes:					

Guideway - At-grade Semi Exclusive					
Layout				Length (Ft)	39635.00
Items					
Name	Source and Assumptions	UOM	Unit Cost	Total Cost	
Concrete Encasement and steel ties	FTA Database	LF	\$ 3,385.00	\$ 268,328,950.00	
Embedded Track	FTA Database: Include rails, connectors, DF	TF	\$ 544.00	\$ 43,122,880.00	
OCS	FTA Database: Catenary	TF	\$ 462.00	\$ 18,311,370.00	
Communications	FTA Database: Wired	TF	\$ 373.00	\$ 14,783,855.00	
Signals	FTA Database: Wayside	TF	\$ 743.00	\$ 29,448,805.00	
Substations	FTA Database: Traction Power Supply	LF	\$ 588.00	\$ 23,305,380.00	
Total Cost (2024) \$ 397,301,240.00		Total Cost (2040) \$ 688,914,803.77			
Notes:					

Track Misc Items						
Items						
Name	Source and Assumptions	UOM	Quantity	Unit Cost	Total Cost	Total Cost (2040)
LRV Vehicles	FTA Database. Quantity assumes 31 peak vehicles and a spare ratio of 35%	VEHICLES	42	\$ 7,882,670.00	\$ 331,072,140.00	\$ 574,074,468.94
Special Work for Intersections (TO & Switches)	Based on SEPTA TO cost & inflation calculator: 15 in system	EACH	15	\$ 225,000.00	\$ 3,375,000.00	\$ 5,852,202.88
LRV Yard Track	FTA Database: estimate from 69th St LRV Yard - 8, 250' storage Tracks. Includes yard construction, guideway and track associated with the yard.	TF	2000	\$ 126.00	\$ 252,000.00	\$ 436,964.48
LRV Yard Track Turnouts	Based on SEPTA TO cost & inflation calculator: Estimate from 69th St LRV Yard: 5 in yard	EACH	5	\$ 172,000.00	\$ 860,000.00	\$ 1,491,227.99
At-Grade Stations	FTA Database: Includes station structures including caissons, columns, platforms, canopys, etc.	EACH	18	\$ 5,393,373.00	\$ 97,080,714.00	\$ 168,336,602.81
Aerial Stations	FTA Database: Includes station structures including caissons, columns, platforms, superstructures, etc.	EACH	4	\$ 9,659,844.00	\$ 38,639,376.00	\$ 67,000,138.57
Maintenance Facility	Size and cost based on 69th Master Plan Project.	SF	30000	\$ 1,000.00	\$ 30,000,000.00	\$ 52,019,581.19
Transition Structures from At-Grade to Elevated	FTA Database: Special Structures (\$6502/ft) assuming 350' transition	EACH	1	\$ 826,000.00	\$ 826,000.00	\$ 1,432,272.47

Notes:

Roadway Reconstruction for At grade LRT									
Layout									
Length (Ft)	28387.00	Width (Ft)	12	Number of Lanes	2	Excavation Depth (Ft)	1.83	Total Area (SF)	681,288.00
Items									
Name	Source and Assumptions	UOM	Unit Cost	Total Cost					
GEOTEXTILE, CLASS 4, TYPE A	PennDOT Standard Item 0212-0014	SY	\$ 2.70	\$ 204,386.40					
SUBBASE 8" DEPTH (NO. 2A)	PennDOT Standard Item 0350-0108	SY	\$ 22.00	\$ 1,665,370.67					
Plain Cement Concrete Base Course, 10" Depth	PennDOT Standard Item 0301-0006	SY	\$ 115.00	\$ 8,705,346.67					
SUPERPAVE ASPHALT MIXTURE DESIGN, BINDER COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH	PennDOT Standard Item 0413-6055	SY	\$ 20.00	\$ 1,513,973.33					
SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-E	PennDOT Standard Item 0413-0297	SY	\$ 13.00	\$ 984,082.67					
ASPHALT TACK COAT (NTT/CNTT)	PennDOT Standard Item 0460-0003	SY	\$ 1.00	\$ 151,397.33					
6" PAVEMENT BASE DRAIN	PennDOT Standard Item 0610-7002	LF	\$ 20.00	\$ 1,135,480.00					
GEOTEXTILE, CLASS 1	PennDOT Standard Item 0212-0001	LF	\$ 1.60	\$ 90,838.40					
NO. 8 COARSE AGGREGATE	PennDOT Standard Item 0703-0022	CY	\$ 60.00	\$ 87,373.84					
CLASS 1 EXCAVATION	PennDOT Standard Item 0203-0001	CY	\$ 42.00	\$ 1,942,932.44					
PLAIN CEMENT CONCRETE CURB, 8" HEIGHT	PennDOT Standard Item 0630-0041	LF	\$ 46.00	\$ 2,611,604.00					
Total Cost (2024)	\$ 19,092,785.75				Total Cost (2040)	\$ 33,106,623.96			

Notes: These items are for the reconstruction of the existing roadway when the LRT is in mixed traffic.

Project Information	
Project Name	Roosevelt Blvd
Job No.	
MPMS No.	

Total Transit Length (FT)	77596.00	14.7
Inflation Rate	3.5%	

Roosevelt Blvd Cost Estimate - Subway Items

2- Track, Bored Tunnel					
Layout				Length (Ft)	5332.00
Items					
Name	Source and Assumptions	UOM	Unit Cost	Total Cost	
Ballastless Track	FTA Database: Include rails, connectors. DF	TF	\$ 922.00	\$ 9,832,208.00	
Signals System	FTA Database: Wayside	TF	\$ 1,229.00	\$ 6,553,028.00	
Communications	FTA Database: Wired	TF	\$ 329.00	\$ 1,754,228.00	
Traction Power System	FTA Database: Third Rail System	TF	\$ 566.00	\$ 3,017,912.00	
Substations	FTA Database: Traction Power Supply	TF	\$ 576.00	\$ 3,071,232.00	
Guideway: Bored Tunnel	FTA Database: Include tunneling by means of a tunnel boring machine, drill blasting, minig, and immersed tube tunneling; tunnel structure and finished	LF	\$ 28,034.00	\$ 149,477,288.00	
Total Cost (2024)		\$	173,705,896.00	Total Cost (2040)	\$ 301,203,598.70

Notes:

2- Track, Cut and Cover					
Layout				Length (Ft)	38785.00
Items					
Name	Source and Assumptions	UOM	Unit Cost	Total Cost	
Ballastless Track	FTA Database: Include rails, connectors. DF	TF	\$ 922.00	\$ 71,519,540.00	
Signals System	FTA Database: Wayside	TF	\$ 1,229.00	\$ 47,666,765.00	
Communications	FTA Database: Wired	TF	\$ 329.00	\$ 12,760,265.00	
Traction Power System	FTA Database: Third Rail System	TF	\$ 566.00	\$ 21,952,310.00	
Substations	FTA Database: Traction Power Supply	TF	\$ 576.00	\$ 22,340,160.00	
Guideway: Cut and Cover Tunnel	FTA Database: Excavation, retaining walls, backfill, underground guideway structure and finishes	LF	\$ 30,339.00	\$ 1,176,698,115.00	
Total Cost (2024)		\$	1,352,937,155.00	Total Cost (2040)	\$ 2,345,974,139.54

Notes:

2- Track, Elevated					
Layout				Total Length (Ft)	29590.00
Out-Of Width (FT)	50.00	Length within ROW	17090.00	Length Outside ROW	12500.00
Items					
Name	Source and Assumptions	UOM	Unit Cost	Total Cost	
Ballastless Track	FTA Database: Include rails, connectors. DF	TF	\$ 922.00	\$ 54,563,960.00	
Signals System	FTA Database: Wayside	TF	\$ 1,229.00	\$ 36,366,110.00	
Communications	FTA Database: Wired	TF	\$ 329.00	\$ 9,735,110.00	
Traction Power System	FTA Database: Third Rail System	TF	\$ 566.00	\$ 16,747,940.00	
Substations	FTA Database: Traction Power Supply	TF	\$ 576.00	\$ 17,043,840.00	
Guideway: Aerial	FTA Database: Foundation excavation; guideway structures including caissons, columns, bridges, viaducts, cross-overs, fly-overs.	LF	\$ 15,434.00	\$ 456,692,060.00	
Right-of-Way Acquisition	Cost Per Acreage taken from KOP Rail Cost Estimate	AC	\$ 1,000,000.00	\$ 14,348,025.71	
Total Cost (2024)		\$	605,497,045.71	Total Cost (2040)	\$ 1,049,923,424.42

Notes: North of Southampton Rd will be outside PennDOT ROW and will require ROW Acquisition.

2- Track, At-Grade

Layout					
				Length (Ft)	3889.00
Items					
Name	Source and Assumptions	UOM	Unit Cost	Total Cost	
Ballastless Track	FTA Database: Include rails, connectors. DF	TF	\$ 922.00	\$ 7,171,316.00	
Signals System	FTA Database: Wayside	TF	\$ 1,229.00	\$ 4,779,581.00	
Communications	FTA Database: Wired	TF	\$ 329.00	\$ 1,279,481.00	
Traction Power System	FTA Database: Third Rail System	TF	\$ 566.00	\$ 2,201,174.00	
Substations	FTA Database: Traction Power Supply	TF	\$ 576.00	\$ 2,240,064.00	
Total Cost (2024) \$ 17,671,616.00		Total Cost (2040) \$ 30,642,335.45			
Notes:					

Track						
Items						
Name	Source and Assumptions	UOM	Quantity	Unit Cost	Total Cost	Total Cost (2040)
BSL Vehicles	FTA Database. Quantity based on 120 peak vehicles and 20% spare ratio.	VEHICLES	144	\$ 5,149,609.00	\$ 741,543,696.00	\$ 1,285,826,416.79
MFL Vehicles	FTA Database. Quantity based on 12 peak vehicles and 20% spare ratio for the extension to MFL	VEHICLES	15	\$ 5,149,609.00	\$ 77,244,135.00	\$ 133,940,251.75
Interlockings	Taken from cost estimate of new DXO for MFSE Resignalization Project: No. 8 DXO every 2.5 Miles, this was the average of miles between each crossover move between BSS	EACH	6	\$ 6,800,000.00	\$ 40,800,000.00	\$ 70,746,630.43
Junction @ Erie BSS	SEPTA Special trackwork cost of recent procurement & inflation calculator	EACH	2	\$ 225,000.00	\$ 450,000.00	\$ 780,293.72
BSS Terminal Yard Tracks	FTA Database: Estimate based on Fern Rock Yard 800/storage track, 10 tracks - this needs an idea of design & capacity, is subject to change. Includes yard construction, guideway and track associated with the yard.	TF	8000	\$ 1,396.00	\$ 11,168,000.00	\$ 19,365,156.09
Yard Turnouts	SEPTA Special trackwork cost of recent procurement & inflation calculator. Number of	EACH	8	\$ 172,000.00	\$ 1,376,000.00	\$ 2,385,964.79
Sub-Grade Stations	FTA Database: Includes retaining walls backfill and structure.	EACH	8	\$ 119,792,576.00	\$ 958,340,608.00	\$ 1,661,749,235.67
Elevated Stations	FTA Database: Includes station structures including caissons, columns, platforms, superstructures, etc.	EACH	4	\$ 65,626,876.00	\$ 262,507,504.00	\$ 455,184,347.29
Fare Collection System @ Sub Grade Stations	FTA Database: fare collection gates etc.	EACH	8	\$ 3,774,788.00	\$ 30,198,304.00	\$ 52,363,437.56
Fare Collection System @ Elevated Stations	FTA Database: fare collection gates etc.	EACH	4	\$ 3,774,788.00	\$ 15,099,152.00	\$ 26,181,718.78
Maintenance Facility	FTA Database: Used 50 Vehicles, subject to change based on how many vehicles we are storing & servicing at this facility. Includes heavy maintenance and overhaul facilities.	SF	30000	\$ 1,000.00	\$ 30,000,000.00	\$ 52,019,581.19
MFL Junction @ FTC (SPECIAL WORK & WYE) *ONLY FOR ELEVATED EXT TO MFL*	Assuming stub ending at Roosevelt	EACH	2	\$ 1,000,000.00	\$ 2,000,000.00	\$ 3,467,972.08
Bridge Street Garage Demolition *ONLY FOR EXT TO MFL*	FTA Database	LF	370	\$ 1,072.00	\$ 396,640.00	\$ 687,768.22
Notes:						

2- Track, Underground Extension to MFL				
Layout				
			Length (Ft)	4224.00
Items				
Name	Source and Assumptions	UOM	Unit Cost	Total Cost
Ballastless Track	FTA Database: Include rails, connectors. DF	TF	\$ 922.00	\$ 3,894,528.00
Signals System	FTA Database: Wayside	TF	\$ 1,229.00	\$ 5,191,296.00
Communications	FTA Database: Wired	TF	\$ 329.00	\$ 1,389,696.00
Traction Power System	FTA Database: Third Rail System	TF	\$ 566.00	\$ 2,390,784.00
Substations	FTA Database: Traction Power Supply	TF	\$ 576.00	\$ 2,433,024.00
Guideway: Cut and cover	FTA Database: Excavation, retaining walls, backfill, underground guideway structure and finishes	LF	\$ 30,339.00	\$ 128,151,936.00
Total Cost (2024) \$ 143,451,264.00			Total Cost (2040) \$ 248,742,489.17	
Notes:				

2- Track, Elevated Extension to MFL				
Layout				
Out-Of Width (FT)	50.00	Length Outside ROW	4224.00	Length (Ft)
				4224.00
Items				
Name	Source and Assumptions	UOM	Unit Cost	Total Cost
Ballastless Track	FTA Database: Include rails, connectors. DF	TF	\$ 922.00	\$ 3,894,528.00
Signals System	FTA Database: Wayside	TF	\$ 1,229.00	\$ 5,191,296.00
Communications	FTA Database: Wired	TF	\$ 329.00	\$ 1,389,696.00
Traction Power System	FTA Database: Third Rail System	TF	\$ 566.00	\$ 2,390,784.00
Substations	FTA Database: Traction Power Supply	TF	\$ 576.00	\$ 2,433,024.00
Guideway: Aerial	FTA Database: Foundation excavation; guideway structures including caissons, columns, bridges.	LF	\$ 15,434.00	\$ 65,193,216.00
Right-of-Way Acquisition	Cost Per Acreage taken from KOP Rail Cost Estimate	AC	\$ 1,000,000.00	\$ 4,848,484.85
Total Cost (2024) \$ 85,341,028.85			Total Cost (2040) \$ 147,980,152.65	
Notes:				

Project Information	
Project Name	Roosevelt Blvd
Job No.	
MPMS No.	

Total Transit	98589.00	18.67
Length (FT)		
Inflation Rate	3.5%	

Roosevelt Blvd Cost Estimate - BRT Items

At Grade BRT Dedicated Lane									
Layout									
Length (Ft)	56339.00	Width (Ft)	12	Number of Lanes	2	Excavation Depth (Ft)	1.83	Total Area (SF)	1,352,136.00
Items									
Name	Source and Assumptions	UOM	Unit Cost	Total Cost					
GEOTEXTILE, CLASS 4, TYPE A	PennDOT Standard Item 0212-0014	SY	\$ 2.70	\$ 405,640.80					
SUBBASE 8" DEPTH (NO. 2A)	PennDOT Standard Item 0350-0108	SY	\$ 22.00	\$ 3,305,221.33					
Plain Cement Concrete Base Course, 10" Depth	PennDOT Standard Item 0301-0006	SY	\$ 115.00	\$ 17,277,293.33					
SUPERPAVE ASPHALT MIXTURE DESIGN, BINDER COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH	PennDOT Standard Item 0413-6055	SY	\$ 20.00	\$ 3,004,746.67					
SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-E	PennDOT Standard Item 0413-0297	SY	\$ 13.00	\$ 1,953,085.33					
ASPHALT TACK COAT (NTT/CNTT)	PennDOT Standard Item 0460-0003	SY	\$ 1.00	\$ 300,474.67					
6" PAVEMENT BASE DRAIN	PennDOT Standard Item 0610-7002	LF	\$ 20.00	\$ 2,253,560.00					
GEOTEXTILE, CLASS 1	PennDOT Standard Item 0212-0001	LF	\$ 1.60	\$ 180,284.80					
NO. 8 COARSE AGGREGATE	PennDOT Standard Item 0703-0022	CY	\$ 60.00	\$ 173,408.77					
CLASS 1 EXCAVATION	PennDOT Standard Item 0203-0001	CY	\$ 42.00	\$ 3,856,091.56					
PLAIN CEMENT CONCRETE CURB, 8" HEIGHT	PennDOT Standard Item 0630-0041	LF	\$ 46.00	\$ 5,183,188.00					
RED BUS LANE PAVEMENT MARKINGS	PennDOT Special Item. Utilized PennDOT ECMS for price history.	SF	\$ 11.25	\$ 15,211,530.00					
TRANSVERSE PAVEMENT MARKINGS	Assumed 20% of length per lane. PennDOT Standard Item 0960-0021	LF	\$ 8.00	\$ 1,261,993.60					
PAVEMENT MARKING LEGENDS	2 legends spaced out every 1000'. PennDOT Standard Item 0960-0101.	EACH	\$ 285.00	\$ 64,226.46					
Total Cost (2024) \$		54,430,745.32	Total Cost (2040) \$		94,382,152.53				
Notes:									

BRT Misc Items						
Items						
Name	Source and Assumptions	UOM	Quantity	Unit Cost	Total Cost	Total Cost (2040)
Zero Emissions Bus	FTA Database. Quantity based on 31 peak vehicles, and a 35% spare ratio	VEHICLES	42	\$ 1,364,722.00	\$ 57,318,324.00	\$ 99,389,173.64
Stations	FTA Database	EACH	22	\$ 1,443,712.00	\$ 31,761,664.00	\$ 55,074,281.98
Maintenance Facility	Size and cost based on 69th Master Plan Project.	SF	40000	\$ 800.00	\$ 32,000,000.00	\$ 55,487,553.27
Notes:						

Project Information	
Project Name	Roosevelt Blvd
Job No.	
MPMS No.	

Roosevelt Boulevard 2040 Order of Magnitude Cost Estimate - Roadway Unit Cost Justification

0203-0001 Class 1 Excavation							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
16334	6	2/29/2024	11667	CY	1	\$58.00	
48175	6	4/27/2023	19466	CY	1	\$35.00	
107794	6	2/15/2024	41260	CY	1	\$33.00	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 42.00	\$ 42.00 "INITIALS"
					TOTAL COST	\$ -	
Notes:							

0301-0006 Plain Cement Concrete Base Course, 10" Depth							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
79910	6	6/30/2022	2796	SY	1	\$150.00	
106264	6	12/16/2022	3046	SY	1	\$100.00	
110415	6	5/13/2021	849	SY	1	\$75.00	
111501	6	1/13/2022	38	SY	1	\$100.00	
115759	6	7/13/2023	173	SY	1	\$135.00	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 112.00	\$ 115.00 "INITIALS"
					TOTAL COST	\$ -	
Notes:							

0413-6055 SUPERPAVE ASPHALT MIXTURE DESIGN, BINDER COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
14541	6	8/25/2022	10743	SY	1	\$20.00	
48175	6	4/27/2023	38699	SY	1	\$16.50	
79910	6	6/30/2022	18609	SY	1	\$17.00	
116262	6	3/30/2023	5762	SY	1	\$25.00	
119160	6	12/14/2023	479	SY	1	\$24.00	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 20.50	\$ 20.00 "INITIALS"
					TOTAL COST	\$ -	
Notes:							

0413-0297 SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64S-22, 3 TO < 10 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-E								
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES	
14541	6	8/25/2022	64319	SY	1	\$10.50		
79910	6	6/30/2022	52807	SY	1	\$13.00		
106264	6	12/16/2022	80740	SY	1	\$18.00		
111170	6	10/20/2022	22417	SY	1	\$12.00		
116262	6	3/30/2023	36015	SY	1	\$11.00		
							ESTIMATOR PRICE	
		Roosevelt Blvd			AVERAGE	\$ 12.90	\$ 13.00	"INITIALS"
					TOTAL COST	\$ -		
Notes:								

0350-0108 SUBBASE 8" DEPTH (NO. 2A)								
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES	
16334	6	2/29/2024	12667	SY	1	\$22.00		
79910	6	6/30/2022	70413	SY	1	\$21.00		
90612	6	4/27/2023	5206	SY	1	\$22.84		
92323	6	3/23/2023	8388	SY	1	\$20.00		
							ESTIMATOR PRICE	
		Roosevelt Blvd			AVERAGE	\$ 21.46	\$ 22.00	"INITIALS"
					TOTAL COST	\$ -		
Notes:								

0460-0003 ASPHALT TACK COAT (NTT/CNTT)								
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES	
79910	6	6/30/2022	148603	SY	1	\$0.80		
15306	6	3/2/2023	14134	SY	1	\$1.10		
16738	6	9/28/2023	15872	SY	1	\$2.00		
112298	6	5/25/2023	1738016	SY	1	\$0.67		
112299	6	2/2/2023	640940	SY	1	\$0.65		
							ESTIMATOR PRICE	
		Roosevelt Blvd			AVERAGE	\$ 1.04	\$ 1.00	"INITIALS"
					TOTAL COST	\$ -		
Notes:								

0610-7002 6" PAVEMENT BASE DRAIN								
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES	
79910	6	6/30/2022	29945	LF	1	\$19.00		
16738	6	9/28/2023	21496	LF	1	\$14.25		
16334	6	2/29/2024	4561	LF	1	\$25.00		
107794	6	2/15/2024	7663	LF	1	\$20.00		
							ESTIMATOR PRICE	
		Roosevelt Blvd			AVERAGE	\$ 19.56	\$ 20.00	"INITIALS"
					TOTAL COST	\$ -		
Notes:								

0212-0001 GEOTEXTILE, CLASS 1							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
16738	6	9/28/2023	21496	LF	1	\$2.00	
79910	6	6/30/2022	34043	LF	1	\$1.40	
92323	6	3/23/2023	1985	LF	1	\$1.24	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 1.55	\$ 1.60 "INITIALS"
					TOTAL COST	\$ -	
Notes:							

0212-0014 GEOTEXTILE, CLASS 4, TYPE A							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
16738	6	9/28/2023	87983	SY	1	\$2.50	
79910	6	6/30/2022	120115	SY	1	\$2.40	
106264	6	12/16/2022	66602	SY	1	\$3.00	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 2.63	\$ 2.70 "INITIALS"
					TOTAL COST	\$ -	
Notes:							

0703-0022 NO. 8 COARSE AGGREGATE							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
110949	6	5/25/2023	103	CY	1	\$63.00	
110963	6	10/20/2022	13	CY	1	\$60.00	
57849	6	11/3/2022	61	CY	1	\$52.75	
106264	6	12/16/2022	233	CY	1	\$65.00	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 60.19	\$ 60.00 "INITIALS"
					TOTAL COST	\$ -	
Notes:							

0630-0041 PLAIN CEMENT CONCRETE CURB, 8" HEIGHT							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
14541	6	8/25/2022	5691	LF	1	\$50.00	
48175	6	4/27/2023	7931	LF	1	\$44.00	
107794	6	2/15/2024	8063	LF	1	\$45.00	
116262	6	3/30/2023	9810	LF	1	\$45.00	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 46.00	\$ 46.00 "INITIALS"
					TOTAL COST	\$ -	
Notes:							

0676-0001 CEMENT CONCRETE SIDEWALK							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
79910	6	6/30/2022	10711	SY	1	\$140.00	
48175	6	4/27/2023	4036	SY	1	\$165.00	
106264	6	12/16/2022	4487	SY	1	\$110.00	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 138.33	\$ 140.00 "INITIALS"
					TOTAL COST	\$ -	
Notes:							

0350-0106 SUBBASE 6" DEPTH (NO.2A)							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
16738	6	9/28/2023	29050	SY	1	\$12.50	
17697	6	11/3/2022	14677	SY	1	\$16.00	
79910	6	6/30/2022	34428	SY	1	\$20.00	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 16.17	\$ 16.50 "INITIALS"
					TOTAL COST	\$ -	
Notes:							

0313-0424 SUPERPAVE ASPHALT MIXTURE DESIGN, BASE COURSE, PG 64S-22, 0.3 TO < 3 MILLION ESALS, 25.0 MM MIX, 5" DEPTH							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
16334	6	2/29/2024	11804	SY	1	\$37.50	
63486	6	1/14/2021	19767	SY	1	\$24.50	
110415	6	5/13/2021	2451	SY	1	\$30.00	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 30.67	\$ 31.00 "INITIALS"
					TOTAL COST	\$ -	
Notes:							

0413-0244 SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64S-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-E							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
92323	6	3/23/2023	19948	SY	1	\$11.09	
115422	6	1/25/2024	30002	SY	1	\$10.35	
16334	6	2/29/2024	13068	SY	1	\$11.00	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 10.81	\$ 11.00 "INITIALS"
					TOTAL COST	\$ -	
Notes: Using SRL-E instead of L due to limited projects using L.							

0804-0036 SEEDING AND SOIL SUPPLEMENTS - FORMULA B RESIDENTIAL MIX							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
16738	6	9/28/2023	1150	LB	1	\$16.00	
102709	6	11/2/2023	149	LB	1	\$20.00	
111024	6	7/13/2023	330	LB	1	\$17.00	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 17.67	\$ 18.00 "INITIALS"
					TOTAL COST	\$ -	

0802-0001 TOPSOIL FURNISHED AND PLACED							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
79830	6	5/12/2022	1267	CY	1	\$96.50	
79910	6	6/30/2022	16115	CY	1	\$98.00	
16738	6	9/28/2023	7147	CY	1	\$70.00	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 88.17	\$ 89.00 "INITIALS"
					TOTAL COST	\$ -	

0204-0100 CLASS 3 EXCAVATION							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
47992	6	5/26/2022	595	CY	1	\$46.75	
106264	6	12/16/2022	1573	CY	1	\$50.00	
116878	6	8/11/2022	680	CY	1	\$55.00	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 50.58	\$ 50.00 "INITIALS"
					TOTAL COST	\$ -	

0205-0100 FOREIGN BORROW EXCAVATION							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
102709	6	11/2/2023	12000	CY	1	\$16.00	
105077	6	3/23/2023	6073	CY	1	\$25.00	
106264	6	12/16/2022	13184	CY	1	\$20.00	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 20.33	\$ 21.00 "INITIALS"
					TOTAL COST	\$ -	

1001-1001 CLASS AAAP CEMENT CONCRETE							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
110354	2	8/12/2021	512	CY	1	\$1,000.00	
10328	5	9/14/2023	555	CY	1	\$1,929.46	
114378	5	8/24/2023	25	CY	1	\$1,700.00	

PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	ESTIMATOR PRICE	ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 1,543.15	\$ 1,545.00	"INITIALS"
					TOTAL COST	\$ -		

0680-0121 MEMBRANE WATERPROOFING SYSTEM INSTALLED ON OTHER SURFACES								
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	ESTIMATOR PRICE	ESTIMATOR
69423	2	4/13/2023	238	SY	1	\$95.00		
74344	12	3/14/2024	225	SY	1	\$45.00		
87778	11	12/14/2023	240	SY	1	\$105.00		
		Roosevelt Blvd			AVERAGE	\$ 81.67	\$ 82.00	"INITIALS"
					TOTAL COST	\$ -		

1001-0611 6" STRUCTURE FOUNDATION DRAIN								
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	ESTIMATOR PRICE	ESTIMATOR
87778	11	12/14/2023	486	LF	1	\$32.56		
106124	3	9/15/2022	834	LF	1	\$13.90		
120915	1	3/14/2024	385	LF	1	\$20.00		
		Roosevelt Blvd			AVERAGE	\$ 22.15	\$ 23.00	"INITIALS"
					TOTAL COST	\$ -		

9000-XXXX ARCHITECTURAL SURFACE TREATMENT								
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	ESTIMATOR PRICE	ESTIMATOR
				SY				
		Roosevelt Blvd			AVERAGE	#DIV/0!	\$ 210.00	"INITIALS"
					TOTAL COST	\$ -		

Note: Cost taken from 2020 Cost Estimate

1019-0040 PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (PENETRATING SEALERS, REINFORCED CONCRETE SUBSTRUCTURE SURFACES)								
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	ESTIMATOR PRICE	ESTIMATOR
10328	5	9/14/2023	3711	SY	1	\$9.98		
63515	11	12/15/2022	3223	SY	1	\$9.50		
87778	11	12/14/2023	8226	SY	1	\$7.65		
		Roosevelt Blvd			AVERAGE	\$ 9.04	\$ 10.00	"INITIALS"
					TOTAL COST	\$ -		

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0703-0025 NO. 57 COARSE AGGREGATE							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
16738	6	9/28/2023	667	CY	1	\$92.00	
87107	6	9/14/2023	1433	CY	1	\$170.00	
111464	6	11/2/2023	899	CY	1	\$94.00	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 118.67	\$ 119.00 "INITIALS"
					TOTAL COST	\$ -	

0623-0303 CONCRETE MEDIAN BARRIER, F-SHAPE, 50" HEIGHT							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
16738	6	9/28/2023	7443	LF	1	\$150.00	
86006	5	12/14/2023	13334	LF	1	\$150.00	
97013	8	7/13/2023	5205	LF	1	\$151.00	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 150.33	\$ 150.00 "INITIALS"
					TOTAL COST	\$ -	

0960-0005 6" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
104989	6	5/11/2023	515405	LF	1	\$1.15	
112500	6	8/24/2023	409566	LF	1	\$1.17	
119265	6	5/11/2023	45000	LF	1	\$1.35	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 1.22	\$ 1.25 "INITIALS"
					TOTAL COST	\$ -	

0960-0021 24" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
109083	6	5/11/2023	13252	LF	1	\$7.00	
112500	6	8/24/2023	147430	LF	1	\$8.60	
119265	6	5/11/2023	17020	LF	1	\$8.00	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 7.87	\$ 8.00 "INITIALS"
					TOTAL COST	\$ -	

9000-XXXX GREEN HOT THERMOPLASTIC PAVEMENT MARKINGS							
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PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
112500	6	8/24/2023	12439	SF	1	\$9.80	
97828	8	8/24/2023	6572	SF	1	\$10.00	
111496	6	12/14/2023	890	SF	1	\$13.70	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 11.17	\$ 11.25 "INITIALS"
					TOTAL COST	\$ -	

0960-0101 WHITE HOT THERMOPLASTIC LEGEND, "ONLY", 8' - 0"							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
104989	6	5/11/2023	234	EACH	1	\$300.00	
112500	6	8/24/2023	160	EACH	1	\$310.00	
104813	6	4/13/2023	124	EACH	1	\$244.44	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 284.81	\$ 285.00 "INITIALS"
					TOTAL COST	\$ -	

0620-1600 TYPE 31-S GUIDE RAIL							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
16738	6	9/28/2023	11513	LF	1	\$32.00	
112299	6	2/2/2023	10625	LF	1	\$41.40	
115424	6	12/15/2022	9313	LF	1	\$40.00	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 37.80	\$ 38.00 "INITIALS"
					TOTAL COST	\$ -	

0619-0459 PERMANENT IMPACT ATTENUATING DEVICE, TYPE II, TEST LEVEL 3, TANGENT (MASH)							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
112298	6	5/25/2023	31	EACH	1	\$5,022.50	
16738	6	9/28/2023	15	EACH	1	\$4,000.00	
115424	6	12/15/2022	19	EACH	1	\$3,550.00	
							ESTIMATOR PRICE ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 4,190.83	\$ 4,200.00 "INITIALS"
					TOTAL COST	\$ -	

0619-0744 PERMANENT IMPACT ATTENUATING DEVICE, TYPE V, TEST LEVEL 3, MASH, WIDTHS LESS THAN OR EQUAL TO 36 INCHES							
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES
112299	6	2/2/2023	10	EACH	1	\$53,000.00	
79910	6	6/30/2022	5	EACH	1	\$26,000.00	
48175	6	4/27/2023	2	EACH	1	\$35,000.00	

							ESTIMATOR PRICE	ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 38,000.00	\$ 38,000.00	"INITIALS"
					TOTAL COST	\$ -		

9000-XXXX TEMPORARY EXCAVATION SUPPORT AND PROTECION SYSTEM								
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES	
							ESTIMATOR PRICE	ESTIMATOR
		Roosevelt Blvd		SF	AVERAGE		\$ 100.00	"INITIALS"
					TOTAL COST	\$ -		

Note: Cost taken from 2020 Cost Estimate

0204-0001 CLASS 2 EXCAVATION								
PROJECT	DISTRICT	LET DATE	QUANTITY	UNIT	BID	UNIT PRICE	NOTES	
107794	6	2/15/2024	973	CY	1	\$110.00		
111024	6	7/13/2023	701	CY	1	\$95.00		
48175	6	4/27/2023	504	CY	1	\$90.00		
							ESTIMATOR PRICE	ESTIMATOR
		Roosevelt Blvd			AVERAGE	\$ 98.33	\$ 100.00	"INITIALS"
					TOTAL COST	\$ -		