

MEMORANDUM

Date: August 21, 2023
To: Paul Trombino, III, City of Greeley
From: Ryan Davis, P.E., PTOE
Subject: MPDG Grant - Benefit Cost Analysis
Mobility Enhancements for Regional Growth and Equity (MERGE) Project

This technical memorandum documents the methodology and results of a benefit-cost analysis (BCA) for the proposed US 34 interchanges at 35th Avenue and 47th Avenue and a proposed Mobility Hub; referred to hereinafter as the MERGE Project, in Greeley, Colorado.

Purpose and Need

MERGE will be located in the heart of Greeley along US Highway 34. The project will be approximately two and half miles west of the connection with US Highway 85, a north to south highway of regional importance. US Highway 34 is a critical east-west transportation corridor for northern Colorado’s fastest growing community and an important regional connection between the region’s largest population and employment centers: Greeley, Fort Collins, and Loveland. Greeley has approximately 108,795 residents. While this project is not fully incorporated in a Historically Disadvantaged Area, a portion of the roadway is directly adjacent to an area with the designation. This project will have direct benefit to the noted area even if it is not fully imbedded in the designated area. The project location can be viewed in Figure 1 below. The proposed mobility hub and interchange locations are noted with a red circle. At each interchange, the intersection to the north will be mitigated as well.

Figure 1. Project Location



1. No-Build – Do nothing alternative
2. Build – Along the US 34 corridor in Greeley, construction of an interchange at 35th Avenue and providing auxiliary lanes to 47th Avenue, construction of an interchange at 47th Avenue and construct a Mobility Hub in the median of US 34 (inclusive of transit and multi-modal transportation connectivity) between the 35th and 47th Avenue interchanges. At the 35th Avenue interchange, the intersection of 35th Avenue and Centerplace Drive will have lane additions and signal retiming. At the 47th Avenue interchange, the intersection of 47th Avenue and Centerplace Drive will have lane reconfiguration and signal retiming.

Background

In January of 2019, a Planning and Environmental Linkages (PEL) Study was completed for US Highway 34 between Larimer County Road 29 and Weld County Road 53 within Larimer County, Weld County, City of Evans, City of Greeley, City of Loveland, Johnstown, Kersey, Garden City, and Windsor. The goal of the early integrated planning efforts is to improve transportation decision making while streamlining subsequent alternatives analysis during the National Environmental Policy Act (NEPA) process. While this PEL study covered an area much larger than the City of Greeley's Multimodal Project Discretionary Grant (MPDG) project location, it includes two of the intersections that are included with the MPDG project. Construction of an interchange at 35th Avenue and widening from four to six lanes to 47th Avenue, and construction of an interchange at 47th Avenue were both identified as high priority projects in the PEL.

Subsequent to the completion of the PEL, the Colorado General Assembly passed an aggressive greenhouse gas reduction bill, H.B. 19-1261. This bill set a goal of reducing statewide greenhouse gas emissions from all sources by twenty-six (26) percent by 2025, fifty (50) percent by 2030 and ninety (90) percent by 2050. The Colorado Department of Transportation (CDOT) then created governing regulations to ensure any future projects will result in a more balanced and sustainable, and less auto-dependent, transportation system over time.

The new regulations, combined with the needs of a growing, diverse, and young demographic and other safety related considerations such as safe routes to school, led the City of Greeley to consider constructing a mobility hub located between the two interchanges.

A primary goal for this MERGE project is to improve traffic safety and provide safe multimodal transportation opportunities while maintaining traffic flow at an acceptable level of service. Using Colorado DOT crash data from 2017-2021, showed that there were 187 and 121 crashes at the US 34 intersections with 35th Avenue and 47th Avenue, respectively.

For the US 34 and 35th Avenue, there were no fatalities, 35 injury crashes, and 152 property damage only crashes associated with intersection in the 5-year time period. For the US 34 and 47th Avenue, there were no fatalities, 31 injury crashes, and 121 property damage only crashes associated with intersection in the 5-year time period. **Tables 1a** and **1b** show a summary of collisions at these two at-grade intersections along US 34.

Table 1a. 2017-2021 US 34 at 35th Avenue Intersection (At-Grade)

KABCO Level	Severity	Number of Collisions
K	Fatal	0
A, B and C	Injuries	35
O	No Injury	152
Total		187

Table 1b. 2017-2021 US 34 at 47th Avenue Intersection (At-Grade)

KABCO Level	Severity	Number of Collisions
K	Fatal	0
A, B and C	Injuries	31
O	No Injury	121
Total		152

Providing a mobility hub for multimodal transportation is another priority in undertaking this MERGE project. This hub is a key component of the project that allows for critical regional/local connectivity as well as safe pedestrian and micro-mobility friendly connection between the north and south sides of the City of Greeley.

With the proposed mobility hub between the 35th Avenue and 47th Avenue interchanges along the US 34 corridor, there would be an increase in other forms of transportation such as transit, biking, micro-mobility and walking. Existing traffic data along US 34 and 35th Avenue for 2019 is displayed in **Table 2**.

Table 2. Existing Traffic Data

Location	2019 AADT
US 34 West of 35th Ave	37,000
US 34 East of 35th Ave	36,000
35 th Ave North of US 34	28,500
35 th Ave South of US 34	26,000

The purpose of a benefit-cost analysis is to express the reasonably expected outcomes of an initial investment to a common measure, base-year dollars. This accounts for benefits occurring over long periods of time, while most of the costs are incurred as an initial investment. Under this approach, a project with monetized benefits that are greater than its costs will have a benefit-to-cost ratio greater than one and therefore is considered an economically beneficial endeavor.

Benefit-Cost Methodology

The monetary benefit for this project is quantified in terms of travel time savings, project area collisions, and roadway operations and maintenance. The costs considered for the project include surfacing, grading and drainage, signal and lighting construction, subbase/base, right-of-way acquisition, as well as engineering fees and costs. The itemized cost breakdown of the build alternative for each interchange and the mobility hub is shown in **Tables D.6.5** of **Appendix D**. Remaining capital values of these roadway features at the end of the analysis period are subtracted from the total cost of the project. The salvage values can be found in **Tables D.7.1** of the **Appendix** for a 7 percent discount rate.

The benefits and economic impacts the MERGE project will deliver are diversified and numerous. It will provide enhanced local and regional mobility and connectivity through the elimination of signals and grade-separation thereby allowing the free flow of passenger and freight traffic. MERGE's implementation will generate significant safety improvements for both vehicular and active transportation. Grade-separation of US34 traffic, in addition to improving the efficiency of east-west travel along the corridor, will provide safer pedestrian and bike crossing which is especially important given several schools and major retail centers are located directly adjacent to the project's location. The elimination of traffic signals at the existing US 34/35th Avenue intersection will alleviate recurring congestion on the regional connector as well as at the busiest local arterial while also lowering greenhouse gases along the corridor through the reduction of idling emissions (where idle times can exceed 220 seconds during peak times).

The results of the analysis provide input for evaluating the overall benefit of the proposed MERGE project to the US 34 corridor. Since the current design is still preliminary, it should be noted that certain benefits and costs may change prior to final design, however these changes are anticipated to be relatively minor as initial cost estimates were made to be conservative.

General Assumptions

- All monetary values are discounted to the 2021 analysis year.
- The 20-year benefit period is based on a 2028 day-of-opening through the year 2047. Benefits are assumed to start January 1st, 2028 and end December 31st, 2047.
- Yearly Build and No-Build benefits are calculated based on linear interpolation over the 20-year analysis period.
- Longer travel times and rerouting of trips during construction years are not included in this analysis. Construction is anticipated to occur under traffic.
- Preliminary cost estimates were completed using unit costs for grading, base, and pavement. An appropriate risk factor given the early stage in the project development process was therefore used.
- General assumptions regarding the costs associated with project area collisions, vehicle operating costs, time costs, component service life, analysis period, and discount rates can be found in **Table D.13** of the **Appendix**.

Calculation of Benefits

Economic values for vehicle occupancy, travel time savings, operating costs, and emissions were obtained from the USDOT guidance: “Benefit-Cost Analysis for Discretionary Grant Programs”. See **Table 2** for a summary of economic values that were used for this analysis. A 20-year analysis period beginning in 2028 and ending in 2047 was chosen for the benefit-cost evaluation with all values discounted to 2021 dollars.

Table 2. BCA Recommended Standard Values

Occupancy Rates	
Auto	1.67
Truck	1.00
Value of Travel Time Savings (per person-hour)	
Auto	\$ 17.80
Truck	\$ 32.00
Operating Cost (per mile)	
Auto	\$ 0.46
Truck	\$ 1.01

Travel Time Benefit

Delay benefit was calculated in terms of delay per person. Using USDOT’s guidance of 1.67 persons per car and 1.0 persons per truck, delay was calculated by using these multipliers and the travel time reported in vehicle hours by SimTraffic. The economic costs of this delay were then quantified by using USDOT’s suggested values for auto and truck travel time savings. The benefits derived from the build scenario for travel time are estimated at **\$84,188,707** for the 47th Avenue interchange and **\$99,115,731** for the 35th Avenue interchange at a 7 percent discount rate. 2028 and 2047 delay benefits can be seen in **Tables D.1.1** of the **Appendix** and a yearly breakdown of the benefit-cost analysis pertaining to delay can be found in **Table D.1.3** of the **Appendix**.

With the addition of the mobility hub and interchanges, the City conservatively estimates it will improve the average transit trip travel time by 20%. This is outlined in Greeley’s Transportation Master Plan. The economic travel benefit was quantified using USDOT’s suggested value for person travel time. The benefits derived from the build scenario for the Mobility Hub are estimated at **\$35,562,276** at a 7% discount rate. 2028 and 2047 delay benefits can be seen in **Table D.12.1** of the **Appendix** and a yearly breakdown of the benefit-cost analysis pertaining to improved service can be found in **Table D.12.3** of the **Appendix**.

Operation and Maintenance Benefits

Roadway and utilities maintenance would be needed if the project does not happen. The City would mill and overlay the roadway and perform a chipseal treatment of the roadway. Historical pricing information for these maintenance activities were obtained from the City and it was assumed that each maintenance activity would occur 20 years after it was last completed. This resulted in the assumption that a mill and overlay for portions of 47th Avenue would occur in 2036 and 2039 and a chipseal treatment in 2031, as well as a mill and overlay for portions of 35th Avenue in 2028 and 2030 and a chipseal treatment in 2035.

The previous maintenance costs were inflated to reflect a probable cost for year of expenditure. This resulted in total discounted maintenance benefits of \$ **\$665,456** per intersection at a 7 percent rate. **Table D.5.3** of the **Appendix** show a yearly breakdown of the benefit-cost analysis for maintenance activities.

Safety Benefits

The methodology used to complete the crash analysis and corresponding benefit-cost ratio is described in the following paragraphs. Crash reduction within the project area was determined by separating intersections and segments so that factors and state averages could be applied appropriately. Crashes were obtained for a five-year period from 2017-2021. These collisions were then annualized, and reductions and additions of crashes were added appropriately relative to geometry reconfigurations.

By grade separating the two intersections along US 34, the vehicle conflict points will be decreased significantly. Crash modification factors were reviewed from the Highway Safety Manual (HSM) and the Crash Modification Factors (CMFs) Clearinghouse. Crash modification factors were used to determine the anticipated number of crashes after an improvement is made to an intersection or roadway. The Crash Modification Factors (CMF) for each improvement type are as follows:

- Converting an at-grade intersection to a grade separated interchange (CMF ID: 460)
 - Applied to all injury level crashes
 - CMF = 0.43
- Converting an at-grade intersection to a grade separated interchange (CMF ID: 461)
 - Applied to all property damage only (O) crashes
 - CMF = 0.64

A copy of the CMFs are included in the **Appendix**. After establishing no-build and build crashes for 2020 using the CMFs, forecasted 2028 and 2047 collisions were obtained by inflating numbers according to the expected AADT growth rate along US 34 for the no-build and build scenarios.

Table 3. KABCO Collision Values – 35th Avenue Interchange

Severity	Description	2028		2047	
		No-Build	Build	No-Build	Build
K	Fatal	0.0	0.0	0.0	0.0
ABC	Injuries	7.0	3.0	8.8	3.8
O	Property Damage Only	30.4	19.5	38	24.4
Total		37.4	22.5	46.8	28.2

Table 6. KABCO Collision Values - 47th Avenue Interchange

Severity	Description	2028		2047	
		No-Build	Build	No-Build	Build
K	Fatal	0.0	0.0	0.0	0.0
ABC	Injuries	6.2	2.7	7.8	3.4
O	Property Damage Only	24.2	15.5	30.3	19.4
Total		30.4	18.2	38.1	22.8

The USDOT's value of a statistical life (VSL) provided in the Benefit-Cost Analysis Guidance for Discretionary Grant Programs were used for the values of the crashes. A resulting benefit of **\$2,730,553** was obtained for 35th Avenue and a benefit of **\$2,363,552** was obtained for 47th Avenue for a 7 percent discount rate over the 20-year analysis period. A yearly breakdown of the benefit-cost analysis pertaining to this decrease in collisions can be seen in **Tables D.2** of the **Appendix**.

Transit Facility Amenities

The mobility hub will feature state-of-the-art technology and amenities to best serve users. To quantify the benefit that these amenities will have, the estimated number of users were multiplied by the monetized values of these amenities outlined in the Benefit-Cost Analysis Guidance for Discretionary Grant Programs, 2022. This resulted in a benefit of **\$16,049,066** for a 7 percent discount rate over the 20-year analysis period. A yearly breakdown of the benefit-cost analysis pertaining to these added amenities can be seen in **Tables D.11** of the **Appendix**.

Public Health Benefit

Improved public health to the communities on both sides of the US 34 corridor is another benefit of the proposed project. This benefit was not quantified in terms of active transportation trips that are expected to be induced by the proposed Mobility Hub, but the improved pedestrian and bicycle facilities to the Mobility Hub and active transportation connectivity across US 34 will improve public health. The proposed MERGE project will improve active transportation connectivity through the following improvements:

- Providing a new non-motorized grade-separated crossing of US 34 (inclusive with Mobility Hub), currently one does not exist.
- Grade-separated pedestrian access at the Mobility Hub (pedestrian tunnel)
- Constructing grade-separated interchanges for 35th and 47th Avenues which will eliminate conflicts for pedestrians and vehicles from the US 34 corridor.
- ADA compliant facilities and parking
- Transit station access and connectivity to bus routes with a US 34 center median bus station.

Environmental Analysis

The proposed interchanges will not only decrease travel times but will also decrease greenhouse gas emissions due to less idling time for vehicles. Because the improvements will increase total vehicle miles traveled, a cost of **\$136,592** for a 7 percent discount rate over the 20-year analysis period. A yearly breakdown of the benefit-cost analysis pertaining to these added amenities can be seen in **Tables D.4** of the **Appendix**.

Benefit-Cost Analysis Results

Tables D.6 of the Appendix show a yearly breakdown of design and construction costs for the project. See Table 7, Table 8, and Table 9 for a results summary of the benefit-cost analysis for the MERGE Project.

Table 7. Benefit-Cost Analysis Summary for 35th Avenue Interchange

Benefit-Cost Ratio		
	Benefit	Cost
<i>Emissions</i>	\$ -	\$ 201,884.22
<i>Vehicle Operating</i>	\$ -	\$ 3,692,909.13
<i>Travel Time</i>	\$ 99,115,731.64	\$ -
<i>Safety</i>	\$ 2,730,553.28	\$ -
<i>Maintenance</i>	\$ 665,456.21	\$ -
<i>Construction</i>	\$ -	\$ 38,847,120.22
<i>Salvage Value</i>	\$ 3,000,829.28	\$ -
PV Total Benefit	\$ 102,511,741.13	
PV Total Cost		\$ 42,741,913.58
PV Total Cost-Salvage Value		\$ 39,741,084.30
Benefit-Cost Ratio	2.58	

Table 8. Benefit-Cost Analysis Summary for 47th Avenue Interchange

Benefit-Cost Ratio		
	Benefit	Cost
<i>Emissions</i>	\$ 65,291.85	\$ -
<i>Vehicle Operating</i>	\$ -	\$ 4,335,296.32
<i>Travel Time</i>	\$ 84,188,707.85	\$ -
<i>Safety</i>	\$ 2,363,552.26	\$ -
<i>Maintenance</i>	\$ 665,456.21	\$ -
<i>Construction</i>	\$ -	\$ 34,442,262.39
<i>Salvage Value</i>	\$ 3,099,005.08	\$ -
PV Total Benefit	\$ 87,283,008.16	
PV Total Cost		\$ 38,777,558.71
PV Total Cost-Salvage Value		\$ 35,678,553.64
Benefit-Cost Ratio	2.45	

Table 9. Benefit-Cost Analysis Summary for the Mobility Hub

Benefit-Cost Ratio		
	Benefit	Cost
<i>Transit Amenities</i>	\$ 16,049,066.86	\$ -
<i>Public Transit Travel Time</i>	\$ 19,513,209.70	\$ -
<i>Construction</i>	\$ -	\$ 18,986,530.88
<i>Salvage Value</i>	\$ 1,491,025.75	\$ -
<i>PV Total Benefit</i>	\$ 35,562,276.56	
<i>PV Total Cost</i>		\$ 18,986,530.88
<i>PV Total Cost-Salvage Value</i>		\$ 17,495,505.13
Benefit-Cost Ratio	2.03	

The analysis of the mobility hub and 35th Avenue and 47th Avenue proposed interchanges indicates that the build alternative has a benefit-cost ratio significantly greater than 1.0, meaning that each are economically beneficial projects. The benefits of the project are estimated to be higher than the costs associated with the construction of the project. A more complete breakdown of both the project costs and benefits can be found in **Appendix D**.

Resources Used

- “Benefit-Cost Analysis Guidance for Discretionary Grant Programs.” Office of the Secretary. U.S. Department of Transportation, <https://www.transportation.gov/sites/dot.gov/files/2021-02/Benefit%20Cost%20Analysis%20Guidance%202021.pdf>
- “Highway Safety Manual” Washington D.C. American Association of State Highway and Transportation Officials. 2010. Book
- “Crash Modification Factors Clearinghouse.” *Safety Research Center*, U.S. Department of Transportation Federal Highway Administration, <http://www.cmfclearinghouse.org/>

Appendix

Table D.A.1.1 35th Ave Interchange Travel Time Benefit

		Travel Time Cost					
Year	Project Year	At-Grade Intersection (Existing)			Interchange (Proposed)		
		Light Vehicle	Heavy Vehicle	Total	Light Vehicle	Heavy Vehicle	Total
2021	-8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2022	-7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2023	-6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2024	-5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2025	-4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2026	-3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2027	-2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2028	-1	\$ 58,306,859.66	\$ 1,305,107.37	\$ 59,611,967.03	\$ 58,202,030.41	\$ 1,302,760.93	\$ 59,504,791.35
2029	0	\$ 61,088,178.97	\$ 1,367,362.83	\$ 62,455,541.80	\$ 59,120,614.29	\$ 1,323,321.99	\$ 60,443,936.28
2030	1	\$ 63,869,498.27	\$ 1,429,618.29	\$ 65,299,116.56	\$ 60,039,198.16	\$ 1,343,883.04	\$ 61,383,081.21
2031	2	\$ 66,650,817.58	\$ 1,491,873.75	\$ 68,142,691.33	\$ 60,957,782.04	\$ 1,364,444.10	\$ 62,322,226.14
2032	3	\$ 69,432,136.89	\$ 1,554,129.21	\$ 70,986,266.09	\$ 61,876,365.91	\$ 1,385,005.16	\$ 63,261,371.07
2033	4	\$ 72,213,456.19	\$ 1,616,384.67	\$ 73,829,840.86	\$ 62,794,949.79	\$ 1,405,566.21	\$ 64,200,516.00
2034	5	\$ 74,994,775.50	\$ 1,678,640.13	\$ 76,673,415.63	\$ 63,713,533.66	\$ 1,426,127.27	\$ 65,139,660.93
2035	6	\$ 77,776,094.81	\$ 1,740,895.59	\$ 79,516,990.39	\$ 64,632,117.54	\$ 1,446,688.32	\$ 66,078,805.86
2036	7	\$ 80,557,414.11	\$ 1,803,151.04	\$ 82,360,565.16	\$ 65,550,701.41	\$ 1,467,249.38	\$ 67,017,950.79
2037	8	\$ 83,338,733.42	\$ 1,865,406.50	\$ 85,204,139.92	\$ 66,469,285.29	\$ 1,487,810.43	\$ 67,957,095.72
2038	9	\$ 86,120,052.73	\$ 1,927,661.96	\$ 88,047,714.69	\$ 67,387,869.16	\$ 1,508,371.49	\$ 68,896,240.65
2039	10	\$ 88,901,372.03	\$ 1,989,917.42	\$ 90,891,289.46	\$ 68,306,453.04	\$ 1,528,932.54	\$ 69,835,385.58
2040	11	\$ 91,682,691.34	\$ 2,052,172.88	\$ 93,734,864.22	\$ 69,225,036.91	\$ 1,549,493.60	\$ 70,774,530.51
2041	12	\$ 94,464,010.65	\$ 2,114,428.34	\$ 96,578,438.99	\$ 70,143,620.79	\$ 1,570,054.66	\$ 71,713,675.44
2042	13	\$ 97,245,329.95	\$ 2,176,683.80	\$ 99,422,013.75	\$ 71,062,204.66	\$ 1,590,615.71	\$ 72,652,820.37
2043	14	\$ 100,026,649.26	\$ 2,238,939.26	\$ 102,265,588.52	\$ 71,980,788.54	\$ 1,611,176.77	\$ 73,591,965.30
2044	15	\$ 102,807,968.57	\$ 2,301,194.72	\$ 105,109,163.29	\$ 72,899,372.41	\$ 1,631,737.82	\$ 74,531,110.23
2045	16	\$ 105,589,287.87	\$ 2,363,450.18	\$ 107,952,738.05	\$ 73,817,956.29	\$ 1,652,298.88	\$ 75,470,255.16
2046	17	\$ 108,370,607.18	\$ 2,425,705.64	\$ 110,796,312.82	\$ 74,736,540.16	\$ 1,672,859.93	\$ 76,409,400.09
2047	18	\$ 111,151,926.49	\$ 2,487,961.10	\$ 113,639,887.58	\$ 75,655,124.03	\$ 1,693,420.99	\$ 77,348,545.02
		Total: \$ 1,732,518,546.13			\$ 1,368,533,363.70		

Table D.A.1.2 35th Ave Interchange Travel Time Benefit

		Undiscounted Travel Time Benefit					
Year	Project Year	At-Grade Intersection (Existing)			Interchange (Proposed)		
		Light Vehicle	Heavy Vehicle	Total	Light Vehicle	Heavy Vehicle	Total
2021	-8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2022	-7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2023	-6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2024	-5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2025	-4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2026	-3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2027	-2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2028	-1	\$ -	\$ -	\$ -	\$ 104,829.25	\$ 2,346.44	\$ 107,175.68
2029	0	\$ -	\$ -	\$ -	\$ 1,967,564.68	\$ 44,040.84	\$ 2,011,605.52
2030	1	\$ -	\$ -	\$ -	\$ 3,830,300.11	\$ 85,735.25	\$ 3,916,035.36
2031	2	\$ -	\$ -	\$ -	\$ 5,693,035.54	\$ 127,429.65	\$ 5,820,465.19
2032	3	\$ -	\$ -	\$ -	\$ 7,555,770.97	\$ 169,124.05	\$ 7,724,895.03
2033	4	\$ -	\$ -	\$ -	\$ 9,418,506.41	\$ 210,818.46	\$ 9,629,324.86
2034	5	\$ -	\$ -	\$ -	\$ 11,281,241.84	\$ 252,512.86	\$ 11,533,754.70
2035	6	\$ -	\$ -	\$ -	\$ 13,143,977.27	\$ 294,207.26	\$ 13,438,184.53
2036	7	\$ -	\$ -	\$ -	\$ 15,006,712.70	\$ 335,901.67	\$ 15,342,614.37
2037	8	\$ -	\$ -	\$ -	\$ 16,869,448.13	\$ 377,596.07	\$ 17,247,044.20
2038	9	\$ -	\$ -	\$ -	\$ 18,732,183.56	\$ 419,290.47	\$ 19,151,474.04
2039	10	\$ -	\$ -	\$ -	\$ 20,594,919.00	\$ 460,984.88	\$ 21,055,903.87
2040	11	\$ -	\$ -	\$ -	\$ 22,457,654.43	\$ 502,679.28	\$ 22,960,333.71
2041	12	\$ -	\$ -	\$ -	\$ 24,320,389.86	\$ 544,373.69	\$ 24,864,763.55
2042	13	\$ -	\$ -	\$ -	\$ 26,183,125.29	\$ 586,068.09	\$ 26,769,193.38
2043	14	\$ -	\$ -	\$ -	\$ 28,045,860.72	\$ 627,762.49	\$ 28,673,623.22
2044	15	\$ -	\$ -	\$ -	\$ 29,908,596.16	\$ 669,456.90	\$ 30,578,053.05
2045	16	\$ -	\$ -	\$ -	\$ 31,771,331.59	\$ 711,151.30	\$ 32,482,482.89
2046	17	\$ -	\$ -	\$ -	\$ 33,634,067.02	\$ 752,845.70	\$ 34,386,912.72
2047	18	\$ -	\$ -	\$ -	\$ 35,496,802.45	\$ 794,540.11	\$ 36,291,342.56
		Total:			\$ -	\$ 363,985,182.43	

Base Year For Discounting		2021		Table D.A.1.3 35th Ave Interchange Travel Time Benefit					
Travel Time Discount Rate		7%		PV Travel Time Benefit					
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)			Interchange (Proposed)			
			Light Vehicle	Heavy Vehicle	Total	Light Vehicle	Heavy Vehicle	Total	
2021	-8	27	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2022	-7	26	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2023	-6	25	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2024	-5	24	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2025	-4	23	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2026	-3	22	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2027	-2	21	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2028	-1	20	\$ -	\$ -	\$ -	\$ 65,282.39	\$ 1,461.24	\$ 66,743.63	
2029	0	19	\$ -	\$ -	\$ -	\$ 1,145,140.56	\$ 25,632.17	\$ 1,170,772.73	
2030	1	18	\$ -	\$ -	\$ -	\$ 2,083,429.47	\$ 46,634.29	\$ 2,130,063.77	
2031	2	17	\$ -	\$ -	\$ -	\$ 2,894,050.59	\$ 64,778.77	\$ 2,958,829.36	
2032	3	16	\$ -	\$ -	\$ -	\$ 3,589,692.36	\$ 80,349.62	\$ 3,670,041.98	
2033	4	15	\$ -	\$ -	\$ -	\$ 4,181,929.48	\$ 93,605.92	\$ 4,275,535.40	
2034	5	14	\$ -	\$ -	\$ -	\$ 4,681,314.29	\$ 104,783.86	\$ 4,786,098.15	
2035	6	13	\$ -	\$ -	\$ -	\$ 5,097,461.00	\$ 114,098.65	\$ 5,211,559.65	
2036	7	12	\$ -	\$ -	\$ -	\$ 5,439,123.29	\$ 121,746.22	\$ 5,560,869.51	
2037	8	11	\$ -	\$ -	\$ -	\$ 5,714,265.73	\$ 127,904.85	\$ 5,842,170.58	
2038	9	10	\$ -	\$ -	\$ -	\$ 5,930,129.59	\$ 132,736.63	\$ 6,062,866.22	
2039	10	9	\$ -	\$ -	\$ -	\$ 6,093,293.39	\$ 136,388.79	\$ 6,229,682.18	
2040	11	8	\$ -	\$ -	\$ -	\$ 6,209,728.59	\$ 138,995.01	\$ 6,348,723.60	
2041	12	7	\$ -	\$ -	\$ -	\$ 6,284,850.90	\$ 140,676.50	\$ 6,425,527.40	
2042	13	6	\$ -	\$ -	\$ -	\$ 6,323,567.41	\$ 141,543.11	\$ 6,465,110.52	
2043	14	5	\$ -	\$ -	\$ -	\$ 6,330,319.99	\$ 141,694.26	\$ 6,472,014.25	
2044	15	4	\$ -	\$ -	\$ -	\$ 6,309,125.14	\$ 141,219.85	\$ 6,450,344.99	
2045	16	3	\$ -	\$ -	\$ -	\$ 6,263,610.63	\$ 140,201.08	\$ 6,403,811.71	
2046	17	2	\$ -	\$ -	\$ -	\$ 6,197,049.19	\$ 138,711.20	\$ 6,335,760.39	
2047	18	1	\$ -	\$ -	\$ -	\$ 6,112,389.40	\$ 136,816.23	\$ 6,249,205.62	
Total:			\$ -	\$ -	\$ -	\$ -	\$ -	\$ 99,115,731.64	



Table D.A.2.1 35th Ave Interchange Collision Reduction Benefit

Year	Project Year	Collision Cost	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ 695,420.00	\$ 322,216.34
2029	0	\$ 698,729.05	\$ 323,666.26
2030	1	\$ 702,038.09	\$ 325,116.18
2031	2	\$ 705,347.14	\$ 326,566.09
2032	3	\$ 708,656.19	\$ 328,016.01
2033	4	\$ 711,965.23	\$ 329,465.93
2034	5	\$ 715,274.28	\$ 330,915.85
2035	6	\$ 718,583.33	\$ 332,365.77
2036	7	\$ 721,892.37	\$ 333,815.69
2037	8	\$ 725,201.42	\$ 335,265.61
2038	9	\$ 728,510.47	\$ 336,715.52
2039	10	\$ 731,819.51	\$ 338,165.44
2040	11	\$ 735,128.56	\$ 339,615.36
2041	12	\$ 738,437.61	\$ 341,065.28
2042	13	\$ 741,746.65	\$ 342,515.20
2043	14	\$ 745,055.70	\$ 343,965.12
2044	15	\$ 748,364.75	\$ 345,415.04
2045	16	\$ 751,673.79	\$ 346,864.95
2046	17	\$ 754,982.84	\$ 348,314.87
2047	18	\$ 758,291.89	\$ 349,764.79
Total:		\$ 14,537,118.88	\$ 6,719,811.30

Table D.A.2.2 35th Ave Interchange Collision Reduction Benefit

Year	Project Year	Undiscounted Collision Benefit	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ 373,203.66
2029	0	\$ -	\$ 375,062.79
2030	1	\$ -	\$ 376,921.92
2031	2	\$ -	\$ 378,781.05
2032	3	\$ -	\$ 380,640.17
2033	4	\$ -	\$ 382,499.30
2034	5	\$ -	\$ 384,358.43
2035	6	\$ -	\$ 386,217.56
2036	7	\$ -	\$ 388,076.69
2037	8	\$ -	\$ 389,935.81
2038	9	\$ -	\$ 391,794.94
2039	10	\$ -	\$ 393,654.07
2040	11	\$ -	\$ 395,513.20
2041	12	\$ -	\$ 397,372.33
2042	13	\$ -	\$ 399,231.46
2043	14	\$ -	\$ 401,090.58
2044	15	\$ -	\$ 402,949.71
2045	16	\$ -	\$ 404,808.84
2046	17	\$ -	\$ 406,667.97
2047	18	\$ -	\$ 408,527.10
Total:		\$ -	\$ 7,817,307.58

Base Year For Discounting		2021	Table D.A.2.3 35th Ave Interchange Collision Reduction Benefit	
Safety Discount Rate		7%	PV Collision Benefit	
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	27	\$ -	\$ -
2022	-7	26	\$ -	\$ -
2023	-6	25	\$ -	\$ -
2024	-5	24	\$ -	\$ -
2025	-4	23	\$ -	\$ -
2026	-3	22	\$ -	\$ -
2027	-2	21	\$ -	\$ -
2028	-1	20	\$ -	\$ 232,412.48
2029	0	19	\$ -	\$ 218,289.96
2030	1	18	\$ -	\$ 205,020.55
2031	2	17	\$ -	\$ 192,553.08
2032	3	16	\$ -	\$ 180,839.40
2033	4	15	\$ -	\$ 169,834.26
2034	5	14	\$ -	\$ 159,495.08
2035	6	13	\$ -	\$ 149,781.83
2036	7	12	\$ -	\$ 140,656.85
2037	8	11	\$ -	\$ 132,084.75
2038	9	10	\$ -	\$ 124,032.25
2039	10	9	\$ -	\$ 116,468.04
2040	11	8	\$ -	\$ 109,362.70
2041	12	7	\$ -	\$ 102,688.56
2042	13	6	\$ -	\$ 96,419.62
2043	14	5	\$ -	\$ 90,531.43
2044	15	4	\$ -	\$ 85,000.99
2045	16	3	\$ -	\$ 79,806.69
2046	17	2	\$ -	\$ 74,928.24
2047	18	1	\$ -	\$ 70,346.52
Total:			\$ -	\$ 2,730,553.28



Table D.A.3.1 35th Ave Interchange Vehicle Operating Benefit

		Vehicle Operating Cost					
Year	Project Year	At-Grade Intersection (Existing)			Interchange (Proposed)		
		Light Vehicle	Heavy Vehicle	Total	Light Vehicle	Heavy Vehicle	Total
2021	-8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2022	-7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2023	-6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2024	-5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2025	-4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2026	-3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2027	-2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2028	-1	\$ 18,943,630.61	\$ 848,849.46	\$ 19,792,480.08	\$ 19,233,162.11	\$ 861,823.15	\$ 20,094,985.26
2029	0	\$ 19,009,533.05	\$ 851,802.50	\$ 19,861,335.55	\$ 19,327,926.66	\$ 866,069.47	\$ 20,193,996.13
2030	1	\$ 19,075,435.48	\$ 854,755.54	\$ 19,930,191.01	\$ 19,422,691.20	\$ 870,315.80	\$ 20,293,007.00
2031	2	\$ 19,141,337.91	\$ 857,708.58	\$ 19,999,046.48	\$ 19,517,455.74	\$ 874,562.12	\$ 20,392,017.86
2032	3	\$ 19,207,240.34	\$ 860,661.61	\$ 20,067,901.95	\$ 19,612,220.28	\$ 878,808.45	\$ 20,491,028.73
2033	4	\$ 19,273,142.77	\$ 863,614.65	\$ 20,136,757.42	\$ 19,706,984.82	\$ 883,054.78	\$ 20,590,039.60
2034	5	\$ 19,339,045.20	\$ 866,567.69	\$ 20,205,612.89	\$ 19,801,749.36	\$ 887,301.10	\$ 20,689,050.46
2035	6	\$ 19,404,947.63	\$ 869,520.72	\$ 20,274,468.36	\$ 19,896,513.90	\$ 891,547.43	\$ 20,788,061.33
2036	7	\$ 19,470,850.06	\$ 872,473.76	\$ 20,343,323.82	\$ 19,991,278.44	\$ 895,793.75	\$ 20,887,072.20
2037	8	\$ 19,536,752.49	\$ 875,426.80	\$ 20,412,179.29	\$ 20,086,042.98	\$ 900,040.08	\$ 20,986,083.06
2038	9	\$ 19,602,654.93	\$ 878,379.83	\$ 20,481,034.76	\$ 20,180,807.52	\$ 904,286.41	\$ 21,085,093.93
2039	10	\$ 19,668,557.36	\$ 881,332.87	\$ 20,549,890.23	\$ 20,275,572.06	\$ 908,532.73	\$ 21,184,104.80
2040	11	\$ 19,734,459.79	\$ 884,285.91	\$ 20,618,745.70	\$ 20,370,336.61	\$ 912,779.06	\$ 21,283,115.66
2041	12	\$ 19,800,362.22	\$ 887,238.95	\$ 20,687,601.16	\$ 20,465,101.15	\$ 917,025.38	\$ 21,382,126.53
2042	13	\$ 19,866,264.65	\$ 890,191.98	\$ 20,756,456.63	\$ 20,559,865.69	\$ 921,271.71	\$ 21,481,137.40
2043	14	\$ 19,932,167.08	\$ 893,145.02	\$ 20,825,312.10	\$ 20,654,630.23	\$ 925,518.04	\$ 21,580,148.26
2044	15	\$ 19,998,069.51	\$ 896,098.06	\$ 20,894,167.57	\$ 20,749,394.77	\$ 929,764.36	\$ 21,679,159.13
2045	16	\$ 20,063,971.94	\$ 899,051.09	\$ 20,963,023.04	\$ 20,844,159.31	\$ 934,010.69	\$ 21,778,170.00
2046	17	\$ 20,129,874.37	\$ 902,004.13	\$ 21,031,878.51	\$ 20,938,923.85	\$ 938,257.01	\$ 21,877,180.87
2047	18	\$ 20,195,776.81	\$ 904,957.17	\$ 21,100,733.97	\$ 21,033,688.39	\$ 942,503.34	\$ 21,976,191.73
		Total: \$ 408,932,140.52			\$ 420,711,769.94		

Table D.A.3.2 35th Ave Interchange Vehicle Operating Benefit

Undiscounted Vehicle Operating Cost							
Year	Project Year	At-Grade Intersection (Existing)			Interchange (Proposed)		
		Light Vehicle	Heavy Vehicle	Total	Light Vehicle	Heavy Vehicle	Total
2021	-8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2022	-7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2023	-6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2024	-5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2025	-4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2026	-3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2027	-2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2028	-1	\$ (289,531.50)	\$ (12,973.68)	\$ (302,505.18)	\$ -	\$ -	\$ -
2029	0	\$ (318,393.61)	\$ (14,266.97)	\$ (332,660.58)	\$ -	\$ -	\$ -
2030	1	\$ (347,255.72)	\$ (15,560.26)	\$ (362,815.98)	\$ -	\$ -	\$ -
2031	2	\$ (376,117.83)	\$ (16,853.55)	\$ (392,971.38)	\$ -	\$ -	\$ -
2032	3	\$ (404,979.94)	\$ (18,146.84)	\$ (423,126.78)	\$ -	\$ -	\$ -
2033	4	\$ (433,842.05)	\$ (19,440.13)	\$ (453,282.18)	\$ -	\$ -	\$ -
2034	5	\$ (462,704.16)	\$ (20,733.42)	\$ (483,437.58)	\$ -	\$ -	\$ -
2035	6	\$ (491,566.27)	\$ (22,026.71)	\$ (513,592.97)	\$ -	\$ -	\$ -
2036	7	\$ (520,428.38)	\$ (23,319.99)	\$ (543,748.37)	\$ -	\$ -	\$ -
2037	8	\$ (549,290.49)	\$ (24,613.28)	\$ (573,903.77)	\$ -	\$ -	\$ -
2038	9	\$ (578,152.60)	\$ (25,906.57)	\$ (604,059.17)	\$ -	\$ -	\$ -
2039	10	\$ (607,014.71)	\$ (27,199.86)	\$ (634,214.57)	\$ -	\$ -	\$ -
2040	11	\$ (635,876.82)	\$ (28,493.15)	\$ (664,369.97)	\$ -	\$ -	\$ -
2041	12	\$ (664,738.93)	\$ (29,786.44)	\$ (694,525.37)	\$ -	\$ -	\$ -
2042	13	\$ (693,601.04)	\$ (31,079.73)	\$ (724,680.76)	\$ -	\$ -	\$ -
2043	14	\$ (722,463.15)	\$ (32,373.02)	\$ (754,836.16)	\$ -	\$ -	\$ -
2044	15	\$ (751,325.26)	\$ (33,666.30)	\$ (784,991.56)	\$ -	\$ -	\$ -
2045	16	\$ (780,187.37)	\$ (34,959.59)	\$ (815,146.96)	\$ -	\$ -	\$ -
2046	17	\$ (809,049.48)	\$ (36,252.88)	\$ (845,302.36)	\$ -	\$ -	\$ -
2047	18	\$ (837,911.59)	\$ (37,546.17)	\$ (875,457.76)	\$ -	\$ -	\$ -
		Total: \$ (11,779,629.42)			\$ -		

Base Year For Discounting		2021		Table D.A.3.3 35th Ave Interchange Vehicle Operating Benefit					
Vehicle Operating Costs Discount Rate		7%		PV Vehicle Operating Cost					
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)			Interchange (Proposed)			
			Light Vehicle	Heavy Vehicle	Total	Light Vehicle	Heavy Vehicle	Total	
2021	-8	27	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2022	-7	26	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2023	-6	25	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2024	-5	24	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2025	-4	23	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2026	-3	22	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2027	-2	21	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2028	-1	20	\$ (180,305.67)	\$ (8,079.36)	\$ (188,385.03)	\$ -	\$ -	\$ -	
2029	0	19	\$ (185,307.98)	\$ (8,303.51)	\$ (193,611.49)	\$ -	\$ -	\$ -	
2030	1	18	\$ (188,884.10)	\$ (8,463.75)	\$ (197,347.85)	\$ -	\$ -	\$ -	
2031	2	17	\$ (191,199.23)	\$ (8,567.49)	\$ (199,766.72)	\$ -	\$ -	\$ -	
2032	3	16	\$ (192,403.05)	\$ (8,621.43)	\$ (201,024.48)	\$ -	\$ -	\$ -	
2033	4	15	\$ (192,631.06)	\$ (8,631.65)	\$ (201,262.71)	\$ -	\$ -	\$ -	
2034	5	14	\$ (192,005.78)	\$ (8,603.63)	\$ (200,609.41)	\$ -	\$ -	\$ -	
2035	6	13	\$ (190,637.87)	\$ (8,542.34)	\$ (199,180.21)	\$ -	\$ -	\$ -	
2036	7	12	\$ (188,627.19)	\$ (8,452.24)	\$ (197,079.43)	\$ -	\$ -	\$ -	
2037	8	11	\$ (186,063.69)	\$ (8,337.37)	\$ (194,401.06)	\$ -	\$ -	\$ -	
2038	9	10	\$ (183,028.31)	\$ (8,201.36)	\$ (191,229.66)	\$ -	\$ -	\$ -	
2039	10	9	\$ (179,593.75)	\$ (8,047.46)	\$ (187,641.21)	\$ -	\$ -	\$ -	
2040	11	8	\$ (175,825.24)	\$ (7,878.59)	\$ (183,703.83)	\$ -	\$ -	\$ -	
2041	12	7	\$ (171,781.17)	\$ (7,697.38)	\$ (179,478.55)	\$ -	\$ -	\$ -	
2042	13	6	\$ (167,513.73)	\$ (7,506.16)	\$ (175,019.89)	\$ -	\$ -	\$ -	
2043	14	5	\$ (163,069.44)	\$ (7,307.02)	\$ (170,376.46)	\$ -	\$ -	\$ -	
2044	15	4	\$ (158,489.72)	\$ (7,101.80)	\$ (165,591.52)	\$ -	\$ -	\$ -	
2045	16	3	\$ (153,811.30)	\$ (6,892.17)	\$ (160,703.47)	\$ -	\$ -	\$ -	
2046	17	2	\$ (149,066.70)	\$ (6,679.56)	\$ (155,746.26)	\$ -	\$ -	\$ -	
2047	18	1	\$ (144,284.60)	\$ (6,465.28)	\$ (150,749.88)	\$ -	\$ -	\$ -	
			Total: \$ (3,692,909.13)			\$ -			



Table D.A.4.1 35th Ave Interchange Emissions Reduction Benefit

Year	Project Year	Emissions Cost	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ 2,347,418.14	\$ 2,446,941.61
2029	0	\$ 2,410,244.18	\$ 2,512,936.22
2030	1	\$ 2,480,560.82	\$ 2,585,608.71
2031	2	\$ 2,512,691.97	\$ 2,618,212.06
2032	3	\$ 2,545,281.15	\$ 2,651,048.22
2033	4	\$ 2,578,328.36	\$ 2,684,117.20
2034	5	\$ 2,611,833.62	\$ 2,717,418.99
2035	6	\$ 2,645,796.91	\$ 2,750,953.59
2036	7	\$ 2,695,985.11	\$ 2,799,524.00
2037	8	\$ 2,731,093.50	\$ 2,833,640.63
2038	9	\$ 2,766,659.92	\$ 2,867,990.08
2039	10	\$ 2,802,684.37	\$ 2,902,572.34
2040	11	\$ 2,839,166.86	\$ 2,937,387.41
2041	12	\$ 2,893,019.36	\$ 2,987,820.33
2042	13	\$ 2,930,646.95	\$ 3,023,217.43
2043	14	\$ 2,968,732.57	\$ 3,058,847.35
2044	15	\$ 3,007,276.22	\$ 3,094,710.08
2045	16	\$ 3,046,277.92	\$ 3,130,805.63
2046	17	\$ 3,103,794.71	\$ 3,183,101.04
2047	18	\$ 3,143,941.50	\$ 3,219,778.62
Total:		\$ 55,061,434.14	\$ 57,006,631.55
			\$ 1,945,197.41

Table D.A.4.2 35th Ave Interchange Emissions Reduction Benefit

Year	Project Year	Undiscounted Emission Cost	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ (99,523.47)	\$ -
2029	0	\$ (102,692.04)	\$ -
2030	1	\$ (105,047.89)	\$ -
2031	2	\$ (105,520.09)	\$ -
2032	3	\$ (105,767.08)	\$ -
2033	4	\$ (105,788.83)	\$ -
2034	5	\$ (105,585.37)	\$ -
2035	6	\$ (105,156.68)	\$ -
2036	7	\$ (103,538.88)	\$ -
2037	8	\$ (102,547.13)	\$ -
2038	9	\$ (101,330.16)	\$ -
2039	10	\$ (99,887.97)	\$ -
2040	11	\$ (98,220.55)	\$ -
2041	12	\$ (94,800.96)	\$ -
2042	13	\$ (92,570.48)	\$ -
2043	14	\$ (90,114.78)	\$ -
2044	15	\$ (87,433.86)	\$ -
2045	16	\$ (84,527.71)	\$ -
2046	17	\$ (79,306.33)	\$ -
2047	18	\$ (75,837.13)	\$ -
Total:		\$ (1,945,197.41)	\$ -
			\$ (1,945,197.41)

Base Year For Discounting		2021		Table D.A.4.3 35th Ave Interchange Emissions Reduction Benefit	
Discount Rate Varies Depending on Emission Type			PV Emission Cost		
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)	
2021	-8	27	\$ -	\$ -	
2022	-7	26	\$ -	\$ -	
2023	-6	25	\$ -	\$ -	
2024	-5	24	\$ -	\$ -	
2025	-4	23	\$ -	\$ -	
2026	-3	22	\$ -	\$ -	
2027	-2	21	\$ -	\$ -	
2028	-1	20	\$ (61,234.84)	\$ -	
2029	0	19	\$ (57,473.24)	\$ -	
2030	1	18	\$ (52,971.10)	\$ -	
2031	2	17	\$ (47,404.54)	\$ -	
2032	3	16	\$ (41,740.98)	\$ -	
2033	4	15	\$ (36,014.99)	\$ -	
2034	5	14	\$ (30,257.44)	\$ -	
2035	6	13	\$ (24,495.82)	\$ -	
2036	7	12	\$ (18,135.85)	\$ -	
2037	8	11	\$ (12,384.34)	\$ -	
2038	9	10	\$ (6,697.34)	\$ -	
2039	10	9	\$ (1,091.37)	\$ -	
2040	11	8	\$ -	\$ 4,419.16	
2041	12	7	\$ -	\$ 10,667.21	
2042	13	6	\$ -	\$ 15,987.10	
2043	14	5	\$ -	\$ 21,176.39	
2044	15	4	\$ -	\$ 26,227.54	
2045	16	3	\$ -	\$ 31,134.24	
2046	17	2	\$ -	\$ 36,889.62	
2047	18	1	\$ -	\$ 41,516.36	
Total:			\$ (389,901.84)	\$ 188,017.62	
			\$	(201,884.22)	



Table D.A.5.1 35th Ave Interchange Maintenance Benefit

Year	Project Year	Uninflated Maintenance Cost	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ 396,284.62	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ 399,868.90	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ 97,160.04	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ 893,313.56	\$ -

Table D.A.5.2 35th Ave Interchange Maintenance Bene

Current Year	2023	Inflated (to Current Year) Maintenance Cost	
Inflation Rate	4%	At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ 463,596.95	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ 505,961.72	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ 149,573.42	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ 1,119,132.10	\$ -

fit

Table D.A.5.3 35th Ave Interchange Maintenance Benefit

Year	Project Year	Undiscounted Maintenance Benefit	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ 463,596.95
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ 505,961.72
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ 149,573.42
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ 1,119,132.10

Base Year For Discounting		2021	Table D.A.5.4 35th Ave Interchange Maintenance Benefit	
Maintenance Discount Rate		7%	PV Maintenance Benefit	
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	27	\$ -	\$ -
2022	-7	26	\$ -	\$ -
2023	-6	25	\$ -	\$ -
2024	-5	24	\$ -	\$ -
2025	-4	23	\$ -	\$ -
2026	-3	22	\$ -	\$ -
2027	-2	21	\$ -	\$ 308,914.23
2028	-1	20	\$ -	\$ -
2029	0	19	\$ -	\$ 294,474.33
2030	1	18	\$ -	\$ -
2031	2	17	\$ -	\$ -
2032	3	16	\$ -	\$ -
2033	4	15	\$ -	\$ -
2034	5	14	\$ -	\$ 62,067.65
2035	6	13	\$ -	\$ -
2036	7	12	\$ -	\$ -
2037	8	11	\$ -	\$ -
2038	9	10	\$ -	\$ -
2039	10	9	\$ -	\$ -
2040	11	8	\$ -	\$ -
2041	12	7	\$ -	\$ -
2042	13	6	\$ -	\$ -
2043	14	5	\$ -	\$ -
2044	15	4	\$ -	\$ -
2045	16	3	\$ -	\$ -
2046	17	2	\$ -	\$ -
2047	18	1	\$ -	\$ -
Total:			\$ -	\$ 665,456.21



Table D.A.6.1 35th Ave Interchange Design and Construction Cost

Year	Project Year	Uninflated Construction Cost	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ 720,000.00
2025	-4	\$ -	\$ 2,465,660.00
2026	-3	\$ -	\$ 23,059,955.00
2027	-2	\$ -	\$ 21,122,525.00
2028	-1	\$ -	\$ 8,040,460.00
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ 55,408,600.00

Table D.A.6.2 35th Ave Interchange Design and Construction Cost

Construction Costs (Cost in 2026 Dollars)		Inflated (to Project Year 0) Construction Cost	
Inflation Rate	4%	At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ 665,680.47
2025	-4	\$ -	\$ 2,370,826.92
2026	-3	\$ -	\$ 23,059,955.00
2027	-2	\$ -	\$ 21,967,426.00
2028	-1	\$ -	\$ 8,696,561.54
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ 56,760,449.93

Table D.A.6.3 35th Ave Interchange Design and Construction Cost

Year	Project Year	Undiscounted Construction Cost	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ 665,680.47
2025	-4	\$ -	\$ 2,370,826.92
2026	-3	\$ -	\$ 23,059,955.00
2027	-2	\$ -	\$ 21,967,426.00
2028	-1	\$ -	\$ 8,696,561.54
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ 56,760,449.93

Base Year For Discounting		2021		Table D.A.6.4 35th Ave Interchange Design and Construction Cost	
Construction Discount Rate		7%		PV Construction Cost	
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)	
2021	-8	27	\$ -	\$ -	
2022	-7	26	\$ -	\$ -	
2023	-6	25	\$ -	\$ -	
2024	-5	24	\$ -	\$ 543,393.56	
2025	-4	23	\$ -	\$ 1,808,692.51	
2026	-3	22	\$ -	\$ 16,441,429.21	
2027	-2	21	\$ -	\$ 14,637,823.49	
2028	-1	20	\$ -	\$ 5,415,781.45	
2029	0	19	\$ -	\$ -	
2030	1	18	\$ -	\$ -	
2031	2	17	\$ -	\$ -	
2032	3	16	\$ -	\$ -	
2033	4	15	\$ -	\$ -	
2034	5	14	\$ -	\$ -	
2035	6	13	\$ -	\$ -	
2036	7	12	\$ -	\$ -	
2037	8	11	\$ -	\$ -	
2038	9	10	\$ -	\$ -	
2039	10	9	\$ -	\$ -	
2040	11	8	\$ -	\$ -	
2041	12	7	\$ -	\$ -	
2042	13	6	\$ -	\$ -	
2043	14	5	\$ -	\$ -	
2044	15	4	\$ -	\$ -	
2045	16	3	\$ -	\$ -	
2046	17	2	\$ -	\$ -	
2047	18	1	\$ -	\$ -	
Total:			\$ -	\$ 38,847,120.22	

Table D.A.6.5 35th Ave Interchange Yearly Construction Costs (Cost in 2026 Dollars)

Yearly Construction Cost								
Year	Engineering	ROW	Grading and Draining	Subbase/Base	Surfacing	Major Structures	Lighting/Signals	Other Costs
2021	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2022	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2023	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2024	\$ 720,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2025	\$ 1,080,000.00	\$ 160,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,225,660.00
2026	\$ 2,520,000.00	\$ -	\$ 4,560,595.00	\$ 1,525,920.00	\$ 3,602,490.00	\$ 7,177,800.00	\$ 609,000.00	\$ 3,064,150.00
2027	\$ 2,160,000.00	\$ -	\$ 1,754,075.00	\$ 1,109,760.00	\$ 7,204,980.00	\$ 3,588,900.00	\$ 1,015,000.00	\$ 4,289,810.00
2028	\$ 720,000.00	\$ -	\$ 701,630.00	\$ 138,720.00	\$ 1,200,830.00	\$ 1,196,300.00	\$ 406,000.00	\$ 3,676,980.00
2029	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2030	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2031	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2032	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2034	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2035	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2036	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2037	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2038	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2039	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2040	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2041	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2043	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2044	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2046	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2047	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total:	\$ 7,200,000.00	\$ 160,000.00	\$ 7,016,300.00	\$ 2,774,400.00	\$ 12,008,300.00	\$ 11,963,000.00	\$ 2,030,000.00	\$ 12,256,600.00
								\$ 55,408,600.00

Table D.A.7.1

35th Ave Interchange Salvage Value

Salvage Year		2045	PV Salvage Value	
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	27	\$ -	\$ -
2022	-7	26	\$ -	\$ -
2023	-6	25	\$ -	\$ -
2024	-5	24	\$ -	\$ -
2025	-4	23	\$ -	\$ 118,461.54
2026	-3	22	\$ -	\$ 8,218,836.00
2027	-2	21	\$ -	\$ 5,231,284.55
2028	-1	20	\$ -	\$ 1,652,725.18
2029	0	19	\$ -	\$ -
2030	1	18	\$ -	\$ -
2031	2	17	\$ -	\$ -
2032	3	16	\$ -	\$ -
2033	4	15	\$ -	\$ -
2034	5	14	\$ -	\$ -
2035	6	13	\$ -	\$ -
2036	7	12	\$ -	\$ -
2037	8	11	\$ -	\$ -
2038	9	10	\$ -	\$ -
2039	10	9	\$ -	\$ -
2040	11	8	\$ -	\$ -
2041	12	7	\$ -	\$ -
2042	13	6	\$ -	\$ -
2043	14	5	\$ -	\$ -
2044	15	4	\$ -	\$ -
2045	16	3	\$ -	\$ -
2046	17	2	\$ -	\$ -
2047	18	1	\$ -	\$ -

Total: \$ - \$ 15,221,307.27
 Construction Discount Rate 7% \$ 3,000,829.28



Table D.A.8.1 35th Ave Interchange Pedestrian Benefit

Year	Project Year	Pedestrian Benefit	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Table D.A.8.2 35th Ave Interchange Pedestrian Benefit

Base Year For Discounting		2021	Table D.A.8.2 35th Ave Interchange Pedestrian Benefit		
Pedestrian Facilities Discount Rate		7%	PV Pedestrian Benefit		
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)	
2021	-8	27	\$ -	\$ -	
2022	-7	26	\$ -	\$ -	
2023	-6	25	\$ -	\$ -	
2024	-5	24	\$ -	\$ -	
2025	-4	23	\$ -	\$ -	
2026	-3	22	\$ -	\$ -	
2027	-2	21	\$ -	\$ -	
2028	-1	20	\$ -	\$ -	
2029	0	19	\$ -	\$ -	
2030	1	18	\$ -	\$ -	
2031	2	17	\$ -	\$ -	
2032	3	16	\$ -	\$ -	
2033	4	15	\$ -	\$ -	
2034	5	14	\$ -	\$ -	
2035	6	13	\$ -	\$ -	
2036	7	12	\$ -	\$ -	
2037	8	11	\$ -	\$ -	
2038	9	10	\$ -	\$ -	
2039	10	9	\$ -	\$ -	
2040	11	8	\$ -	\$ -	
2041	12	7	\$ -	\$ -	
2042	13	6	\$ -	\$ -	
2043	14	5	\$ -	\$ -	
2044	15	4	\$ -	\$ -	
2045	16	3	\$ -	\$ -	
2046	17	2	\$ -	\$ -	
2047	18	1	\$ -	\$ -	
Total:		\$ -	\$ -	\$ -	

Table D.A.9.1 35th Ave Interchange Health Benefit

Year	Project Year	Health Benefit	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Table D.A.9.2 35th Ave Interchange Health Benefit

Base Year For Discounting		2021	Table D.A.9.2 35th Ave Interchange Health Benefit		
Health Improvements Discount Rate		7%	PV Health Benefit		
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)	
2021	-8	27	\$ -	\$ -	
2022	-7	26	\$ -	\$ -	
2023	-6	25	\$ -	\$ -	
2024	-5	24	\$ -	\$ -	
2025	-4	23	\$ -	\$ -	
2026	-3	22	\$ -	\$ -	
2027	-2	21	\$ -	\$ -	
2028	-1	20	\$ -	\$ -	
2029	0	19	\$ -	\$ -	
2030	1	18	\$ -	\$ -	
2031	2	17	\$ -	\$ -	
2032	3	16	\$ -	\$ -	
2033	4	15	\$ -	\$ -	
2034	5	14	\$ -	\$ -	
2035	6	13	\$ -	\$ -	
2036	7	12	\$ -	\$ -	
2037	8	11	\$ -	\$ -	
2038	9	10	\$ -	\$ -	
2039	10	9	\$ -	\$ -	
2040	11	8	\$ -	\$ -	
2041	12	7	\$ -	\$ -	
2042	13	6	\$ -	\$ -	
2043	14	5	\$ -	\$ -	
2044	15	4	\$ -	\$ -	
2045	16	3	\$ -	\$ -	
2046	17	2	\$ -	\$ -	
2047	18	1	\$ -	\$ -	
Total:		\$ -	\$ -	\$ -	

Table D.A.10.1 35th Ave Interchange Bicycling Benefit

Year	Project Year	Bicycle Benefit	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Table D.A.10.2 35th Ave Interchange Bicycling Benefit

Base Year For Discounting		2021	Table D.A.10.2 35th Ave Interchange Bicycling Benefit		
Cycling Facilities Discount Rate		7%	PV Bicycle Benefit		
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)	
2021	-8	27	\$ -	\$ -	
2022	-7	26	\$ -	\$ -	
2023	-6	25	\$ -	\$ -	
2024	-5	24	\$ -	\$ -	
2025	-4	23	\$ -	\$ -	
2026	-3	22	\$ -	\$ -	
2027	-2	21	\$ -	\$ -	
2028	-1	20	\$ -	\$ -	
2029	0	19	\$ -	\$ -	
2030	1	18	\$ -	\$ -	
2031	2	17	\$ -	\$ -	
2032	3	16	\$ -	\$ -	
2033	4	15	\$ -	\$ -	
2034	5	14	\$ -	\$ -	
2035	6	13	\$ -	\$ -	
2036	7	12	\$ -	\$ -	
2037	8	11	\$ -	\$ -	
2038	9	10	\$ -	\$ -	
2039	10	9	\$ -	\$ -	
2040	11	8	\$ -	\$ -	
2041	12	7	\$ -	\$ -	
2042	13	6	\$ -	\$ -	
2043	14	5	\$ -	\$ -	
2044	15	4	\$ -	\$ -	
2045	16	3	\$ -	\$ -	
2046	17	2	\$ -	\$ -	
2047	18	1	\$ -	\$ -	
Total:		\$ -	\$ -	\$ -	

Table D.A.11.1 35th Ave Interchange Transit Amenity Benefit

Year	Project Year	Bicycle Benefit	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Table D.A.11.2 35th Ave Interchange Transit Amenity Benefit

Base Year For Discounting		2021	Table D.A.11.2 35th Ave Interchange Transit Amenity Benefit		
Transit Amenity Discount Rate		7%	PV Bicycle Benefit		
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)	
2021	-8	27	\$ -	\$ -	
2022	-7	26	\$ -	\$ -	
2023	-6	25	\$ -	\$ -	
2024	-5	24	\$ -	\$ -	
2025	-4	23	\$ -	\$ -	
2026	-3	22	\$ -	\$ -	
2027	-2	21	\$ -	\$ -	
2028	-1	20	\$ -	\$ -	
2029	0	19	\$ -	\$ -	
2030	1	18	\$ -	\$ -	
2031	2	17	\$ -	\$ -	
2032	3	16	\$ -	\$ -	
2033	4	15	\$ -	\$ -	
2034	5	14	\$ -	\$ -	
2035	6	13	\$ -	\$ -	
2036	7	12	\$ -	\$ -	
2037	8	11	\$ -	\$ -	
2038	9	10	\$ -	\$ -	
2039	10	9	\$ -	\$ -	
2040	11	8	\$ -	\$ -	
2041	12	7	\$ -	\$ -	
2042	13	6	\$ -	\$ -	
2043	14	5	\$ -	\$ -	
2044	15	4	\$ -	\$ -	
2045	16	3	\$ -	\$ -	
2046	17	2	\$ -	\$ -	
2047	18	1	\$ -	\$ -	
Total:		\$ -	\$ -	\$ -	

Table D.A.12.1 35th Ave Interchange Public Transit Travel Time Cost

Year	Project Year	Public Transit Travel Time Cost	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -
		\$ -	\$ -

Table D.A.12.2 35th Ave Interchange Public Transit Travel Time Cost

Year	Project Year	Undiscounted Public Transit Travel Time Cost	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -
		\$ -	\$ -

Base Year For Discounting		2021	Table D.A.12.3 35th Ave Interchange Public Transit Travel Time Cost	
Public Transit Travel Time Discount Rate		7%	PV Public Transit Travel Time Cost	
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	27	\$ -	\$ -
2022	-7	26	\$ -	\$ -
2023	-6	25	\$ -	\$ -
2024	-5	24	\$ -	\$ -
2025	-4	23	\$ -	\$ -
2026	-3	22	\$ -	\$ -
2027	-2	21	\$ -	\$ -
2028	-1	20	\$ -	\$ -
2029	0	19	\$ -	\$ -
2030	1	18	\$ -	\$ -
2031	2	17	\$ -	\$ -
2032	3	16	\$ -	\$ -
2033	4	15	\$ -	\$ -
2034	5	14	\$ -	\$ -
2035	6	13	\$ -	\$ -
2036	7	12	\$ -	\$ -
2037	8	11	\$ -	\$ -
2038	9	10	\$ -	\$ -
2039	10	9	\$ -	\$ -
2040	11	8	\$ -	\$ -
2041	12	7	\$ -	\$ -
2042	13	6	\$ -	\$ -
2043	14	5	\$ -	\$ -
2044	15	4	\$ -	\$ -
2045	16	3	\$ -	\$ -
2046	17	2	\$ -	\$ -
2047	18	1	\$ -	\$ -
Total:			\$ -	\$ -
			\$ -	\$ -

Table D.B.1.1 47th Ave Interchange Travel Time Benefit

		Travel Time Cost					
Year	Project Year	At-Grade Intersection (Existing)			Interchange (Proposed)		
		Light Vehicle	Heavy Vehicle	Total	Light Vehicle	Heavy Vehicle	Total
2021	-8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2022	-7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2023	-6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2024	-5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2025	-4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2026	-3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2027	-2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2028	-1	\$ 56,267,353.19	\$ 1,259,456.23	\$ 57,526,809.42	\$ 47,470,917.38	\$ 1,062,561.84	\$ 48,533,479.22
2029	0	\$ 57,533,512.70	\$ 1,287,797.21	\$ 58,821,309.91	\$ 48,345,008.22	\$ 1,082,126.99	\$ 49,427,135.21
2030	1	\$ 58,799,672.20	\$ 1,316,138.20	\$ 60,115,810.41	\$ 49,219,099.05	\$ 1,101,692.14	\$ 50,320,791.19
2031	2	\$ 60,065,831.71	\$ 1,344,479.19	\$ 61,410,310.90	\$ 50,093,189.89	\$ 1,121,257.29	\$ 51,214,447.18
2032	3	\$ 61,331,991.21	\$ 1,372,820.18	\$ 62,704,811.40	\$ 50,967,280.73	\$ 1,140,822.44	\$ 52,108,103.17
2033	4	\$ 62,598,150.72	\$ 1,401,161.17	\$ 63,999,311.89	\$ 51,841,371.57	\$ 1,160,387.59	\$ 53,001,759.15
2034	5	\$ 63,864,310.22	\$ 1,429,502.16	\$ 65,293,812.39	\$ 52,715,462.41	\$ 1,179,952.74	\$ 53,895,415.14
2035	6	\$ 65,130,469.73	\$ 1,457,843.15	\$ 66,588,312.88	\$ 53,589,553.25	\$ 1,199,517.88	\$ 54,789,071.13
2036	7	\$ 66,396,629.23	\$ 1,486,184.14	\$ 67,882,813.37	\$ 54,463,644.08	\$ 1,219,083.03	\$ 55,682,727.12
2037	8	\$ 67,662,788.74	\$ 1,514,525.13	\$ 69,177,313.87	\$ 55,337,734.92	\$ 1,238,648.18	\$ 56,576,383.10
2038	9	\$ 68,928,948.24	\$ 1,542,866.12	\$ 70,471,814.36	\$ 56,211,825.76	\$ 1,258,213.33	\$ 57,470,039.09
2039	10	\$ 70,195,107.75	\$ 1,571,207.11	\$ 71,766,314.86	\$ 57,085,916.60	\$ 1,277,778.48	\$ 58,363,695.08
2040	11	\$ 71,461,267.25	\$ 1,599,548.10	\$ 73,060,815.35	\$ 57,960,007.44	\$ 1,297,343.63	\$ 59,257,351.07
2041	12	\$ 72,727,426.76	\$ 1,627,889.09	\$ 74,355,315.85	\$ 58,834,098.28	\$ 1,316,908.78	\$ 60,151,007.05
2042	13	\$ 73,993,586.26	\$ 1,656,230.08	\$ 75,649,816.34	\$ 59,708,189.11	\$ 1,336,473.93	\$ 61,044,663.04
2043	14	\$ 75,259,745.76	\$ 1,684,571.07	\$ 76,944,316.83	\$ 60,582,279.95	\$ 1,356,039.08	\$ 61,938,319.03
2044	15	\$ 76,525,905.27	\$ 1,712,912.06	\$ 78,238,817.33	\$ 61,456,370.79	\$ 1,375,604.22	\$ 62,831,975.01
2045	16	\$ 77,792,064.77	\$ 1,741,253.05	\$ 79,533,317.82	\$ 62,330,461.63	\$ 1,395,169.37	\$ 63,725,631.00
2046	17	\$ 79,058,224.28	\$ 1,769,594.04	\$ 80,827,818.32	\$ 63,204,552.47	\$ 1,414,734.52	\$ 64,619,286.99
2047	18	\$ 80,324,383.78	\$ 1,797,935.03	\$ 82,122,318.81	\$ 64,078,643.30	\$ 1,434,299.67	\$ 65,512,942.98
		Total: \$ 1,396,491,282.31			\$ 1,140,464,221.95		

Table D.B.1.2 47th Ave Interchange Travel Time Benefit

		Undiscounted Travel Time Benefit					
Year	Project Year	At-Grade Intersection (Existing)			Interchange (Proposed)		
		Light Vehicle	Heavy Vehicle	Total	Light Vehicle	Heavy Vehicle	Total
2021	-8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2022	-7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2023	-6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2024	-5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2025	-4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2026	-3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2027	-2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2028	-1	\$ -	\$ -	\$ -	\$ 8,796,435.82	\$ 196,894.38	\$ 8,993,330.20
2029	0	\$ -	\$ -	\$ -	\$ 9,188,504.48	\$ 205,670.22	\$ 9,394,174.71
2030	1	\$ -	\$ -	\$ -	\$ 9,580,573.15	\$ 214,446.07	\$ 9,795,019.22
2031	2	\$ -	\$ -	\$ -	\$ 9,972,641.82	\$ 223,221.91	\$ 10,195,863.72
2032	3	\$ -	\$ -	\$ -	\$ 10,364,710.48	\$ 231,997.75	\$ 10,596,708.23
2033	4	\$ -	\$ -	\$ -	\$ 10,756,779.15	\$ 240,773.59	\$ 10,997,552.74
2034	5	\$ -	\$ -	\$ -	\$ 11,148,847.82	\$ 249,549.43	\$ 11,398,397.24
2035	6	\$ -	\$ -	\$ -	\$ 11,540,916.48	\$ 258,325.27	\$ 11,799,241.75
2036	7	\$ -	\$ -	\$ -	\$ 11,932,985.15	\$ 267,101.11	\$ 12,200,086.26
2037	8	\$ -	\$ -	\$ -	\$ 12,325,053.81	\$ 275,876.95	\$ 12,600,930.76
2038	9	\$ -	\$ -	\$ -	\$ 12,717,122.48	\$ 284,652.79	\$ 13,001,775.27
2039	10	\$ -	\$ -	\$ -	\$ 13,109,191.15	\$ 293,428.63	\$ 13,402,619.78
2040	11	\$ -	\$ -	\$ -	\$ 13,501,259.81	\$ 302,204.47	\$ 13,803,464.29
2041	12	\$ -	\$ -	\$ -	\$ 13,893,328.48	\$ 310,980.31	\$ 14,204,308.79
2042	13	\$ -	\$ -	\$ -	\$ 14,285,397.15	\$ 319,756.15	\$ 14,605,153.30
2043	14	\$ -	\$ -	\$ -	\$ 14,677,465.81	\$ 328,531.99	\$ 15,005,997.81
2044	15	\$ -	\$ -	\$ -	\$ 15,069,534.48	\$ 337,307.83	\$ 15,406,842.31
2045	16	\$ -	\$ -	\$ -	\$ 15,461,603.15	\$ 346,083.67	\$ 15,807,686.82
2046	17	\$ -	\$ -	\$ -	\$ 15,853,671.81	\$ 354,859.51	\$ 16,208,531.33
2047	18	\$ -	\$ -	\$ -	\$ 16,245,740.48	\$ 363,635.36	\$ 16,609,375.83
		Total: \$ -			\$ 256,027,060.36		

Base Year For Discounting		2021		Table D.B.1.3 47th Ave Interchange Travel Time Benefit						
Travel Time Discount Rate		7%		PV Travel Time Benefit						
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)			Interchange (Proposed)				
			Light Vehicle	Heavy Vehicle	Total	Light Vehicle	Heavy Vehicle	Total		
2021	-8	27	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
2022	-7	26	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
2023	-6	25	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
2024	-5	24	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
2025	-4	23	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
2026	-3	22	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
2027	-2	21	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
2028	-1	20	\$ -	\$ -	\$ -	\$ 5,477,978.13	\$ 122,615.93	\$ 5,600,594.06		
2029	0	19	\$ -	\$ -	\$ -	\$ 5,347,793.27	\$ 119,701.94	\$ 5,467,495.21		
2030	1	18	\$ -	\$ -	\$ -	\$ 5,211,197.01	\$ 116,644.45	\$ 5,327,841.46		
2031	2	17	\$ -	\$ -	\$ -	\$ 5,069,585.41	\$ 113,474.70	\$ 5,183,060.11		
2032	3	16	\$ -	\$ -	\$ -	\$ 4,924,199.29	\$ 110,220.46	\$ 5,034,419.75		
2033	4	15	\$ -	\$ -	\$ -	\$ 4,776,138.59	\$ 106,906.35	\$ 4,883,044.94		
2034	5	14	\$ -	\$ -	\$ -	\$ 4,626,375.48	\$ 103,554.14	\$ 4,729,929.62		
2035	6	13	\$ -	\$ -	\$ -	\$ 4,475,766.39	\$ 100,182.99	\$ 4,575,949.38		
2036	7	12	\$ -	\$ -	\$ -	\$ 4,325,062.97	\$ 96,809.73	\$ 4,421,872.70		
2037	8	11	\$ -	\$ -	\$ -	\$ 4,174,922.15	\$ 93,449.07	\$ 4,268,371.21		
2038	9	10	\$ -	\$ -	\$ -	\$ 4,025,915.30	\$ 90,113.78	\$ 4,116,029.08		
2039	10	9	\$ -	\$ -	\$ -	\$ 3,878,536.63	\$ 86,814.94	\$ 3,965,351.58		
2040	11	8	\$ -	\$ -	\$ -	\$ 3,733,210.84	\$ 83,562.05	\$ 3,816,772.90		
2041	12	7	\$ -	\$ -	\$ -	\$ 3,590,300.09	\$ 80,363.22	\$ 3,670,663.31		
2042	13	6	\$ -	\$ -	\$ -	\$ 3,450,110.36	\$ 77,225.30	\$ 3,527,335.66		
2043	14	5	\$ -	\$ -	\$ -	\$ 3,312,897.27	\$ 74,154.00	\$ 3,387,051.26		
2044	15	4	\$ -	\$ -	\$ -	\$ 3,178,871.33	\$ 71,154.04	\$ 3,250,025.37		
2045	16	3	\$ -	\$ -	\$ -	\$ 3,048,202.80	\$ 68,229.23	\$ 3,116,432.03		
2046	17	2	\$ -	\$ -	\$ -	\$ 2,921,025.99	\$ 65,382.57	\$ 2,986,408.57		
2047	18	1	\$ -	\$ -	\$ -	\$ 2,797,443.29	\$ 62,616.37	\$ 2,860,059.66		
Total:			\$ -	\$ -	\$ -	\$ -	\$ -	\$ 84,188,707.85		



Table D.B.2.1 47th Ave Interchange Collision Reduction Benefit

Year	Project Year	Collision Cost	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ 602,860.00	\$ 283,004.13
2029	0	\$ 606,762.68	\$ 284,861.93
2030	1	\$ 610,665.36	\$ 286,719.73
2031	2	\$ 614,568.04	\$ 288,577.52
2032	3	\$ 618,470.72	\$ 290,435.32
2033	4	\$ 622,373.40	\$ 292,293.11
2034	5	\$ 626,276.07	\$ 294,150.91
2035	6	\$ 630,178.75	\$ 296,008.70
2036	7	\$ 634,081.43	\$ 297,866.50
2037	8	\$ 637,984.11	\$ 299,724.29
2038	9	\$ 641,886.79	\$ 301,582.09
2039	10	\$ 645,789.47	\$ 303,439.88
2040	11	\$ 649,692.15	\$ 305,297.68
2041	12	\$ 653,594.83	\$ 307,155.47
2042	13	\$ 657,497.51	\$ 309,013.27
2043	14	\$ 661,400.19	\$ 310,871.06
2044	15	\$ 665,302.87	\$ 312,728.86
2045	16	\$ 669,205.54	\$ 314,586.65
2046	17	\$ 673,108.22	\$ 316,444.45
2047	18	\$ 677,010.90	\$ 318,302.24
Total:		\$ 12,798,709.02	\$ 6,013,063.79

Table D.B.2.2 47th Ave Interchange Collision Reduction Benefit

Year	Project Year	Undiscounted Collision Benefit	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ 319,855.87
2029	0	\$ -	\$ 321,900.75
2030	1	\$ -	\$ 323,945.63
2031	2	\$ -	\$ 325,990.52
2032	3	\$ -	\$ 328,035.40
2033	4	\$ -	\$ 330,080.28
2034	5	\$ -	\$ 332,125.17
2035	6	\$ -	\$ 334,170.05
2036	7	\$ -	\$ 336,214.94
2037	8	\$ -	\$ 338,259.82
2038	9	\$ -	\$ 340,304.70
2039	10	\$ -	\$ 342,349.59
2040	11	\$ -	\$ 344,394.47
2041	12	\$ -	\$ 346,439.36
2042	13	\$ -	\$ 348,484.24
2043	14	\$ -	\$ 350,529.12
2044	15	\$ -	\$ 352,574.01
2045	16	\$ -	\$ 354,618.89
2046	17	\$ -	\$ 356,663.77
2047	18	\$ -	\$ 358,708.66
Total:		\$ -	\$ 6,785,645.24

Base Year For Discounting		2021		Table D.B.2.3 47th Ave Interchange Collision Reduction Benefit	
Safety Discount Rate		7%		PV Collision Benefit	
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)	
2021	-8	27	\$ -	\$ -	-
2022	-7	26	\$ -	\$ -	-
2023	-6	25	\$ -	\$ -	-
2024	-5	24	\$ -	\$ -	-
2025	-4	23	\$ -	\$ -	-
2026	-3	22	\$ -	\$ -	-
2027	-2	21	\$ -	\$ -	-
2028	-1	20	\$ -	\$ 199,190.16	
2029	0	19	\$ -	\$ 187,349.17	
2030	1	18	\$ -	\$ 176,204.96	
2031	2	17	\$ -	\$ 165,717.05	
2032	3	16	\$ -	\$ 155,847.26	
2033	4	15	\$ -	\$ 146,559.59	
2034	5	14	\$ -	\$ 137,820.14	
2035	6	13	\$ -	\$ 129,596.91	
2036	7	12	\$ -	\$ 121,859.77	
2037	8	11	\$ -	\$ 114,580.30	
2038	9	10	\$ -	\$ 107,731.75	
2039	10	9	\$ -	\$ 101,288.89	
2040	11	8	\$ -	\$ 95,227.94	
2041	12	7	\$ -	\$ 89,526.51	
2042	13	6	\$ -	\$ 84,163.50	
2043	14	5	\$ -	\$ 79,119.04	
2044	15	4	\$ -	\$ 74,374.39	
2045	16	3	\$ -	\$ 69,911.92	
2046	17	2	\$ -	\$ 65,715.01	
2047	18	1	\$ -	\$ 61,768.01	
Total:			\$ -	\$ 2,363,552.26	



Table D.B.3.1 47th Ave Interchange Vehicle Operating Benefit

		Vehicle Operating Cost					
Year	Project Year	At-Grade Intersection (Existing)			Interchange (Proposed)		
		Light Vehicle	Heavy Vehicle	Total	Light Vehicle	Heavy Vehicle	Total
2021	-8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2022	-7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2023	-6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2024	-5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2025	-4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2026	-3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2027	-2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2028	-1	\$ 20,685,579.56	\$ 926,904.85	\$ 21,612,484.42	\$ 21,161,796.21	\$ 948,243.75	\$ 22,110,039.96
2029	0	\$ 20,794,522.30	\$ 931,786.49	\$ 21,726,308.79	\$ 21,285,989.22	\$ 953,808.75	\$ 22,239,797.97
2030	1	\$ 20,903,465.04	\$ 936,668.13	\$ 21,840,133.17	\$ 21,410,182.23	\$ 959,373.74	\$ 22,369,555.97
2031	2	\$ 21,012,407.78	\$ 941,549.77	\$ 21,953,957.55	\$ 21,534,375.24	\$ 964,938.73	\$ 22,499,313.97
2032	3	\$ 21,121,350.52	\$ 946,431.41	\$ 22,067,781.93	\$ 21,658,568.25	\$ 970,503.72	\$ 22,629,071.97
2033	4	\$ 21,230,293.25	\$ 951,313.05	\$ 22,181,606.31	\$ 21,782,761.26	\$ 976,068.72	\$ 22,758,829.97
2034	5	\$ 21,339,235.99	\$ 956,194.69	\$ 22,295,430.69	\$ 21,906,954.27	\$ 981,633.71	\$ 22,888,587.98
2035	6	\$ 21,448,178.73	\$ 961,076.33	\$ 22,409,255.06	\$ 22,031,147.28	\$ 987,198.70	\$ 23,018,345.98
2036	7	\$ 21,557,121.47	\$ 965,957.97	\$ 22,523,079.44	\$ 22,155,340.29	\$ 992,763.70	\$ 23,148,103.98
2037	8	\$ 21,666,064.21	\$ 970,839.61	\$ 22,636,903.82	\$ 22,279,533.30	\$ 998,328.69	\$ 23,277,861.98
2038	9	\$ 21,775,006.95	\$ 975,721.25	\$ 22,750,728.20	\$ 22,403,726.31	\$ 1,003,893.68	\$ 23,407,619.99
2039	10	\$ 21,883,949.68	\$ 980,602.89	\$ 22,864,552.58	\$ 22,527,919.31	\$ 1,009,458.67	\$ 23,537,377.99
2040	11	\$ 21,992,892.42	\$ 985,484.53	\$ 22,978,376.95	\$ 22,652,112.32	\$ 1,015,023.67	\$ 23,667,135.99
2041	12	\$ 22,101,835.16	\$ 990,366.17	\$ 23,092,201.33	\$ 22,776,305.33	\$ 1,020,588.66	\$ 23,796,893.99
2042	13	\$ 22,210,777.90	\$ 995,247.81	\$ 23,206,025.71	\$ 22,900,498.34	\$ 1,026,153.65	\$ 23,926,652.00
2043	14	\$ 22,319,720.64	\$ 1,000,129.45	\$ 23,319,850.09	\$ 23,024,691.35	\$ 1,031,718.65	\$ 24,056,410.00
2044	15	\$ 22,428,663.38	\$ 1,005,011.09	\$ 23,433,674.47	\$ 23,148,884.36	\$ 1,037,283.64	\$ 24,186,168.00
2045	16	\$ 22,537,606.11	\$ 1,009,892.73	\$ 23,547,498.85	\$ 23,273,077.37	\$ 1,042,848.63	\$ 24,315,926.00
2046	17	\$ 22,646,548.85	\$ 1,014,774.37	\$ 23,661,323.22	\$ 23,397,270.38	\$ 1,048,413.62	\$ 24,445,684.00
2047	18	\$ 22,755,491.59	\$ 1,019,656.01	\$ 23,775,147.60	\$ 23,521,463.39	\$ 1,053,978.62	\$ 24,575,442.01
		Total: \$ 453,876,320.18			\$ 466,854,819.70		

Table D.B.3.2 47th Ave Interchange Vehicle Operating Benefit

		Undiscounted Vehicle Operating Cost					
Year	Project Year	At-Grade Intersection (Existing)			Interchange (Proposed)		
		Light Vehicle	Heavy Vehicle	Total	Light Vehicle	Heavy Vehicle	Total
2021	-8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2022	-7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2023	-6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2024	-5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2025	-4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2026	-3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2027	-2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2028	-1	\$ (476,216.65)	\$ (21,338.90)	\$ (497,555.55)	\$ -	\$ -	\$ -
2029	0	\$ (491,466.92)	\$ (22,022.25)	\$ (513,489.17)	\$ -	\$ -	\$ -
2030	1	\$ (506,717.19)	\$ (22,705.61)	\$ (529,422.80)	\$ -	\$ -	\$ -
2031	2	\$ (521,967.46)	\$ (23,388.96)	\$ (545,356.42)	\$ -	\$ -	\$ -
2032	3	\$ (537,217.73)	\$ (24,072.31)	\$ (561,290.04)	\$ -	\$ -	\$ -
2033	4	\$ (552,468.00)	\$ (24,755.66)	\$ (577,223.67)	\$ -	\$ -	\$ -
2034	5	\$ (567,718.27)	\$ (25,439.02)	\$ (593,157.29)	\$ -	\$ -	\$ -
2035	6	\$ (582,968.55)	\$ (26,122.37)	\$ (609,090.92)	\$ -	\$ -	\$ -
2036	7	\$ (598,218.82)	\$ (26,805.72)	\$ (625,024.54)	\$ -	\$ -	\$ -
2037	8	\$ (613,469.09)	\$ (27,489.08)	\$ (640,958.16)	\$ -	\$ -	\$ -
2038	9	\$ (628,719.36)	\$ (28,172.43)	\$ (656,891.79)	\$ -	\$ -	\$ -
2039	10	\$ (643,969.63)	\$ (28,855.78)	\$ (672,825.41)	\$ -	\$ -	\$ -
2040	11	\$ (659,219.90)	\$ (29,539.13)	\$ (688,759.04)	\$ -	\$ -	\$ -
2041	12	\$ (674,470.17)	\$ (30,222.49)	\$ (704,692.66)	\$ -	\$ -	\$ -
2042	13	\$ (689,720.44)	\$ (30,905.84)	\$ (720,626.28)	\$ -	\$ -	\$ -
2043	14	\$ (704,970.71)	\$ (31,589.19)	\$ (736,559.91)	\$ -	\$ -	\$ -
2044	15	\$ (720,220.99)	\$ (32,272.55)	\$ (752,493.53)	\$ -	\$ -	\$ -
2045	16	\$ (735,471.26)	\$ (32,955.90)	\$ (768,427.16)	\$ -	\$ -	\$ -
2046	17	\$ (750,721.53)	\$ (33,639.25)	\$ (784,360.78)	\$ -	\$ -	\$ -
2047	18	\$ (765,971.80)	\$ (34,322.60)	\$ (800,294.40)	\$ -	\$ -	\$ -
		Total: \$ (12,978,499.52)			\$ -		

Base Year For Discounting		2021		Table D.B.3.3 47th Ave Interchange Vehicle Operating Benefit					
Vehicle Operating Costs Discount Rate		7%		PV Vehicle Operating Cost					
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)			Interchange (Proposed)			
			Light Vehicle	Heavy Vehicle	Total	Light Vehicle	Heavy Vehicle	Total	
2021	-8	27	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2022	-7	26	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2023	-6	25	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2024	-5	24	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2025	-4	23	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2026	-3	22	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2027	-2	21	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2028	-1	20	\$ (296,563.79)	\$ (13,288.79)	\$ (309,852.59)	\$ -	\$ -	\$ -	
2029	0	19	\$ (286,038.22)	\$ (12,817.15)	\$ (298,855.37)	\$ -	\$ -	\$ -	
2030	1	18	\$ (275,620.58)	\$ (12,350.35)	\$ (287,970.92)	\$ -	\$ -	\$ -	
2031	2	17	\$ (265,341.79)	\$ (11,889.76)	\$ (277,231.55)	\$ -	\$ -	\$ -	
2032	3	16	\$ (255,228.27)	\$ (11,436.58)	\$ (266,664.86)	\$ -	\$ -	\$ -	
2033	4	15	\$ (245,302.40)	\$ (10,991.81)	\$ (256,294.21)	\$ -	\$ -	\$ -	
2034	5	14	\$ (235,582.90)	\$ (10,556.29)	\$ (246,139.19)	\$ -	\$ -	\$ -	
2035	6	13	\$ (226,085.25)	\$ (10,130.71)	\$ (236,215.96)	\$ -	\$ -	\$ -	
2036	7	12	\$ (216,822.03)	\$ (9,715.63)	\$ (226,537.66)	\$ -	\$ -	\$ -	
2037	8	11	\$ (207,803.20)	\$ (9,311.50)	\$ (217,114.71)	\$ -	\$ -	\$ -	
2038	9	10	\$ (199,036.45)	\$ (8,918.67)	\$ (207,955.12)	\$ -	\$ -	\$ -	
2039	10	9	\$ (190,527.38)	\$ (8,537.38)	\$ (199,064.76)	\$ -	\$ -	\$ -	
2040	11	8	\$ (182,279.80)	\$ (8,167.82)	\$ (190,447.61)	\$ -	\$ -	\$ -	
2041	12	7	\$ (174,295.91)	\$ (7,810.07)	\$ (182,105.97)	\$ -	\$ -	\$ -	
2042	13	6	\$ (166,576.51)	\$ (7,464.16)	\$ (174,040.68)	\$ -	\$ -	\$ -	
2043	14	5	\$ (159,121.17)	\$ (7,130.10)	\$ (166,251.27)	\$ -	\$ -	\$ -	
2044	15	4	\$ (151,928.37)	\$ (6,807.79)	\$ (158,736.17)	\$ -	\$ -	\$ -	
2045	16	3	\$ (144,995.67)	\$ (6,497.14)	\$ (151,492.82)	\$ -	\$ -	\$ -	
2046	17	2	\$ (138,319.82)	\$ (6,198.00)	\$ (144,517.83)	\$ -	\$ -	\$ -	
2047	18	1	\$ (131,896.89)	\$ (5,910.20)	\$ (137,807.09)	\$ -	\$ -	\$ -	
			Total: \$ (4,335,296.32)			\$ -			



Table D.B.4.1 47th Ave Interchange Emissions Reduction Benefit

Year	Project Year	Emissions Cost	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ 2,553,410.52	\$ 2,592,164.12
2029	0	\$ 2,621,035.59	\$ 2,661,169.54
2030	1	\$ 2,695,912.38	\$ 2,736,333.85
2031	2	\$ 2,729,043.37	\$ 2,769,066.35
2032	3	\$ 2,762,460.11	\$ 2,802,054.86
2033	4	\$ 2,796,162.62	\$ 2,835,299.37
2034	5	\$ 2,830,150.89	\$ 2,868,799.89
2035	6	\$ 2,864,424.92	\$ 2,902,556.43
2036	7	\$ 2,914,794.44	\$ 2,951,608.53
2037	8	\$ 2,949,782.86	\$ 2,986,005.09
2038	9	\$ 2,985,057.05	\$ 3,020,657.65
2039	10	\$ 3,020,617.00	\$ 3,055,566.22
2040	11	\$ 3,056,462.71	\$ 3,090,730.80
2041	12	\$ 3,109,118.31	\$ 3,141,830.98
2042	13	\$ 3,145,678.42	\$ 3,177,635.59
2043	14	\$ 3,182,524.29	\$ 3,213,696.20
2044	15	\$ 3,219,655.91	\$ 3,250,012.82
2045	16	\$ 3,257,073.30	\$ 3,286,585.45
2046	17	\$ 3,312,014.99	\$ 3,339,733.71
2047	18	\$ 3,350,146.78	\$ 3,376,946.36
Total:		\$ 59,355,526.45	\$ 60,058,453.81
			\$ 702,927.36

Table D.B.4.2 47th Ave Interchange Emissions Reduction Benefit

Year	Project Year	Undiscounted Emission Benefit	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ (38,753.59)	\$ -
2029	0	\$ (40,133.95)	\$ -
2030	1	\$ (40,421.47)	\$ -
2031	2	\$ (40,022.98)	\$ -
2032	3	\$ (39,594.74)	\$ -
2033	4	\$ (39,136.75)	\$ -
2034	5	\$ (38,649.01)	\$ -
2035	6	\$ (38,131.51)	\$ -
2036	7	\$ (36,814.09)	\$ -
2037	8	\$ (36,222.22)	\$ -
2038	9	\$ (35,600.60)	\$ -
2039	10	\$ (34,949.22)	\$ -
2040	11	\$ (34,268.10)	\$ -
2041	12	\$ (32,712.67)	\$ -
2042	13	\$ (31,957.17)	\$ -
2043	14	\$ (31,171.91)	\$ -
2044	15	\$ (30,356.91)	\$ -
2045	16	\$ (29,512.15)	\$ -
2046	17	\$ (27,718.72)	\$ -
2047	18	\$ (26,799.58)	\$ -
Total:		\$ (702,927.36)	\$ -
			\$ (702,927.36)

Base Year For Discounting		2021		Table D.B.4.3 47th Ave Interchange Emissions Reduction Benefit	
Discount Rate Varies Depending on Emission Type			PV Emission Benefit		
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)	
2021	-8	27	\$ -	\$ -	
2022	-7	26	\$ -	\$ -	
2023	-6	25	\$ -	\$ -	
2024	-5	24	\$ -	\$ -	
2025	-4	23	\$ -	\$ -	
2026	-3	22	\$ -	\$ -	
2027	-2	21	\$ -	\$ -	
2028	-1	20	\$ (16,449.27)	\$ -	
2029	0	19	\$ (14,655.70)	\$ -	
2030	1	18	\$ (12,139.61)	\$ -	
2031	2	17	\$ (9,519.74)	\$ -	
2032	3	16	\$ (7,034.71)	\$ -	
2033	4	15	\$ (4,679.46)	\$ -	
2034	5	14	\$ (2,449.00)	\$ -	
2035	6	13	\$ (338.51)	\$ -	
2036	7	12	\$ -	\$ 2,151.10	
2037	8	11	\$ -	\$ 4,030.60	
2038	9	10	\$ -	\$ 5,803.82	
2039	10	9	\$ -	\$ 7,475.13	
2040	11	8	\$ -	\$ 9,048.74	
2041	12	7	\$ -	\$ 10,996.35	
2042	13	6	\$ -	\$ 12,381.11	
2043	14	5	\$ -	\$ 13,680.00	
2044	15	4	\$ -	\$ 14,896.75	
2045	16	3	\$ -	\$ 16,034.94	
2046	17	2	\$ -	\$ 17,536.92	
2047	18	1	\$ -	\$ 18,522.40	
Total:			\$ (67,266.01)	\$ 132,557.86	
				\$ 65,291.85	

Table D.B.5.1 47th Ave Interchange Maintenance Benefit

Year	Project Year	Uninflated Maintenance Cost	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ 396,284.62	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ 399,868.90	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ 97,160.04	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ 893,313.56	\$ -

Table D.B.5.2 47th Ave Interchange Maintenance Bene

Current Year	2023	Inflated (to Current Year) Maintenance Cost	
Inflation Rate	4%	At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ 463,596.95	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ 505,961.72	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ 149,573.42	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ 1,119,132.10	\$ -

fit

Table D.B.5.3 47th Ave Interchange Maintenance Benefit

Year	Project Year	Undiscounted Maintenance Benefit	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ 463,596.95
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ 505,961.72
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ 149,573.42
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ 1,119,132.10

Base Year For Discounting		2021		Table D.B.5.4 47th Ave Interchange Maintenance Benefit	
Maintenance Discount Rate		7%		PV Maintenance Benefit	
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)	
2021	-8	27	\$ -	\$ -	
2022	-7	26	\$ -	\$ -	
2023	-6	25	\$ -	\$ -	
2024	-5	24	\$ -	\$ -	
2025	-4	23	\$ -	\$ -	
2026	-3	22	\$ -	\$ -	
2027	-2	21	\$ -	\$ 308,914.23	
2028	-1	20	\$ -	\$ -	
2029	0	19	\$ -	\$ 294,474.33	
2030	1	18	\$ -	\$ -	
2031	2	17	\$ -	\$ -	
2032	3	16	\$ -	\$ -	
2033	4	15	\$ -	\$ -	
2034	5	14	\$ -	\$ 62,067.65	
2035	6	13	\$ -	\$ -	
2036	7	12	\$ -	\$ -	
2037	8	11	\$ -	\$ -	
2038	9	10	\$ -	\$ -	
2039	10	9	\$ -	\$ -	
2040	11	8	\$ -	\$ -	
2041	12	7	\$ -	\$ -	
2042	13	6	\$ -	\$ -	
2043	14	5	\$ -	\$ -	
2044	15	4	\$ -	\$ -	
2045	16	3	\$ -	\$ -	
2046	17	2	\$ -	\$ -	
2047	18	1	\$ -	\$ -	
Total:			\$ -	\$ 665,456.21	



Table D.B.6.1 47th Ave Interchange Design and Construction Cost

Year	Project Year	Uninflated Construction Cost	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ 580,500.00
2025	-4	\$ -	\$ 4,410,800.00
2026	-3	\$ -	\$ 18,625,115.00
2027	-2	\$ -	\$ 19,188,595.00
2028	-1	\$ -	\$ 6,222,890.00
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ 49,027,900.00

Construction Costs (Cost in 2026 Dollars)

Table D.B.6.2 47th Ave Interchange Design and Construction Cost

Year	Project Year	Inflated (to Project Year 0) Construction Cost	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ 536,704.88
2025	-4	\$ -	\$ 4,241,153.85
2026	-3	\$ -	\$ 18,625,115.00
2027	-2	\$ -	\$ 19,956,138.80
2028	-1	\$ -	\$ 6,730,677.82
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ 50,089,790.35

Table D.B.6.3 47th Ave Interchange Design and Construction Cost

Year	Project Year	Undiscounted Construction Cost	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ 536,704.88
2025	-4	\$ -	\$ 4,241,153.85
2026	-3	\$ -	\$ 18,625,115.00
2027	-2	\$ -	\$ 19,956,138.80
2028	-1	\$ -	\$ 6,730,677.82
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ 50,089,790.35

Base Year For Discounting		2021		Table D.B.6.4 47th Ave Interchange Design and Construction Cost	
Construction Discount Rate		7%		PV Construction Cost	
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)	
2021	-8	27	\$ -	\$ -	
2022	-7	26	\$ -	\$ -	
2023	-6	25	\$ -	\$ -	
2024	-5	24	\$ -	\$ 438,111.06	
2025	-4	23	\$ -	\$ 3,235,555.96	
2026	-3	22	\$ -	\$ 13,279,449.59	
2027	-2	21	\$ -	\$ 13,297,617.91	
2028	-1	20	\$ -	\$ 4,191,527.88	
2029	0	19	\$ -	\$ -	
2030	1	18	\$ -	\$ -	
2031	2	17	\$ -	\$ -	
2032	3	16	\$ -	\$ -	
2033	4	15	\$ -	\$ -	
2034	5	14	\$ -	\$ -	
2035	6	13	\$ -	\$ -	
2036	7	12	\$ -	\$ -	
2037	8	11	\$ -	\$ -	
2038	9	10	\$ -	\$ -	
2039	10	9	\$ -	\$ -	
2040	11	8	\$ -	\$ -	
2041	12	7	\$ -	\$ -	
2042	13	6	\$ -	\$ -	
2043	14	5	\$ -	\$ -	
2044	15	4	\$ -	\$ -	
2045	16	3	\$ -	\$ -	
2046	17	2	\$ -	\$ -	
2047	18	1	\$ -	\$ -	
Total:			\$ -	\$ 34,442,262.39	

Table D.B.6.5 47th Ave Interchange Yearly Construction Costs (Cost in 2026 Dollars)

Year	Yearly Construction Cost								
	Engineering	ROW	Grading and Draining	Subbase/Base	Surfacing	Major Structures	Lighting/Signals	Other Costs	
2021	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2022	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2023	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2024	\$ 580,500.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2025	\$ 870,750.00	\$ 2,736,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 804,050.00	
2026	\$ 2,031,750.00	\$ 1,824,000.00	\$ 5,079,360.00	\$ 1,003,680.00	\$ 3,388,200.00	\$ 2,952,000.00	\$ 336,000.00	\$ 2,010,125.00	
2027	\$ 1,741,500.00	\$ -	\$ 3,232,320.00	\$ 1,254,600.00	\$ 6,776,400.00	\$ 2,361,600.00	\$ 1,008,000.00	\$ 2,814,175.00	
2028	\$ 580,500.00	\$ -	\$ 923,520.00	\$ 250,920.00	\$ 1,129,400.00	\$ 590,400.00	\$ 336,000.00	\$ 2,412,150.00	
2029	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2030	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2031	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2032	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2034	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2035	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2036	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2037	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2038	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2039	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2040	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2041	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2043	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2044	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2046	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2047	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total:	\$ 5,805,000.00	\$ 4,560,000.00	\$ 9,235,200.00	\$ 2,509,200.00	\$ 11,294,000.00	\$ 5,904,000.00	\$ 1,680,000.00	\$ 8,040,500.00	\$ 49,027,900.00

Table D.B.7.1

47th Ave Interchange Salvage Value

Salvage Year		2045		PV Salvage Value	
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)	
2021	-8	27	\$ -	\$ -	-
2022	-7	26	\$ -	\$ -	-
2023	-6	25	\$ -	\$ -	-
2024	-5	24	\$ -	\$ -	-
2025	-4	23	\$ -	\$ 2,025,692.31	2,025,692.31
2026	-3	22	\$ -	\$ 6,995,001.60	6,995,001.60
2027	-2	21	\$ -	\$ 5,293,542.38	5,293,542.38
2028	-1	20	\$ -	\$ 1,405,054.64	1,405,054.64
2029	0	19	\$ -	\$ -	-
2030	1	18	\$ -	\$ -	-
2031	2	17	\$ -	\$ -	-
2032	3	16	\$ -	\$ -	-
2033	4	15	\$ -	\$ -	-
2034	5	14	\$ -	\$ -	-
2035	6	13	\$ -	\$ -	-
2036	7	12	\$ -	\$ -	-
2037	8	11	\$ -	\$ -	-
2038	9	10	\$ -	\$ -	-
2039	10	9	\$ -	\$ -	-
2040	11	8	\$ -	\$ -	-
2041	12	7	\$ -	\$ -	-
2042	13	6	\$ -	\$ -	-
2043	14	5	\$ -	\$ -	-
2044	15	4	\$ -	\$ -	-
2045	16	3	\$ -	\$ -	-
2046	17	2	\$ -	\$ -	-
2047	18	1	\$ -	\$ -	-
Total:			\$ -	\$ 15,719,290.93	
Construction Discount Rate			7%	\$ 3,099,005.08	



Table D.B.8.1 47th Ave Interchange Pedestrian Benefit

Year	Project Year	Pedestrian Benefit	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Table D.B.8.2 47th Ave Interchange Pedestrian Benefit

Base Year For Discounting		2021	PV Pedestrian Benefit	
Pedestrian Facilities Discount Rate		7%		
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	27	\$ -	\$ -
2022	-7	26	\$ -	\$ -
2023	-6	25	\$ -	\$ -
2024	-5	24	\$ -	\$ -
2025	-4	23	\$ -	\$ -
2026	-3	22	\$ -	\$ -
2027	-2	21	\$ -	\$ -
2028	-1	20	\$ -	\$ -
2029	0	19	\$ -	\$ -
2030	1	18	\$ -	\$ -
2031	2	17	\$ -	\$ -
2032	3	16	\$ -	\$ -
2033	4	15	\$ -	\$ -
2034	5	14	\$ -	\$ -
2035	6	13	\$ -	\$ -
2036	7	12	\$ -	\$ -
2037	8	11	\$ -	\$ -
2038	9	10	\$ -	\$ -
2039	10	9	\$ -	\$ -
2040	11	8	\$ -	\$ -
2041	12	7	\$ -	\$ -
2042	13	6	\$ -	\$ -
2043	14	5	\$ -	\$ -
2044	15	4	\$ -	\$ -
2045	16	3	\$ -	\$ -
2046	17	2	\$ -	\$ -
2047	18	1	\$ -	\$ -
Total:		\$ -	\$ -	\$ -

Table D.B.9.1 47th Ave Interchange Health Benefit

Year	Project Year	Health Benefit	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Table D.B.9.2 47th Ave Interchange Health Benefit

Base Year For Discounting		2021	PV Health Benefit	
Health Improvements Discount Rate		7%	At-Grade Intersection (Existing)	Interchange (Proposed)
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	27	\$ -	\$ -
2022	-7	26	\$ -	\$ -
2023	-6	25	\$ -	\$ -
2024	-5	24	\$ -	\$ -
2025	-4	23	\$ -	\$ -
2026	-3	22	\$ -	\$ -
2027	-2	21	\$ -	\$ -
2028	-1	20	\$ -	\$ -
2029	0	19	\$ -	\$ -
2030	1	18	\$ -	\$ -
2031	2	17	\$ -	\$ -
2032	3	16	\$ -	\$ -
2033	4	15	\$ -	\$ -
2034	5	14	\$ -	\$ -
2035	6	13	\$ -	\$ -
2036	7	12	\$ -	\$ -
2037	8	11	\$ -	\$ -
2038	9	10	\$ -	\$ -
2039	10	9	\$ -	\$ -
2040	11	8	\$ -	\$ -
2041	12	7	\$ -	\$ -
2042	13	6	\$ -	\$ -
2043	14	5	\$ -	\$ -
2044	15	4	\$ -	\$ -
2045	16	3	\$ -	\$ -
2046	17	2	\$ -	\$ -
2047	18	1	\$ -	\$ -
Total:		\$ -	\$ -	\$ -

Table D.B.10.1 47th Ave Interchange Bicycling Benefit

Year	Project Year	Bicycle Benefit	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Table D.B.10.2 47th Ave Interchange Bicycling Benefit

Base Year For Discounting		2021	PV Bicycle Benefit	
Cycling Facilities Discount Rate		7%		
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	27	\$ -	\$ -
2022	-7	26	\$ -	\$ -
2023	-6	25	\$ -	\$ -
2024	-5	24	\$ -	\$ -
2025	-4	23	\$ -	\$ -
2026	-3	22	\$ -	\$ -
2027	-2	21	\$ -	\$ -
2028	-1	20	\$ -	\$ -
2029	0	19	\$ -	\$ -
2030	1	18	\$ -	\$ -
2031	2	17	\$ -	\$ -
2032	3	16	\$ -	\$ -
2033	4	15	\$ -	\$ -
2034	5	14	\$ -	\$ -
2035	6	13	\$ -	\$ -
2036	7	12	\$ -	\$ -
2037	8	11	\$ -	\$ -
2038	9	10	\$ -	\$ -
2039	10	9	\$ -	\$ -
2040	11	8	\$ -	\$ -
2041	12	7	\$ -	\$ -
2042	13	6	\$ -	\$ -
2043	14	5	\$ -	\$ -
2044	15	4	\$ -	\$ -
2045	16	3	\$ -	\$ -
2046	17	2	\$ -	\$ -
2047	18	1	\$ -	\$ -
Total:		\$ -	\$ -	\$ -

Table D.B.11.1 47th Ave Interchange Transit Amenity Benefit

Year	Project Year	Bicycle Benefit	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Table D.B.11.2 47th Ave Interchange Transit Amenity Benefit

Base Year For Discounting		2021	PV Bicycle Benefit	
Transit Amenity Discount Rate		7%	At-Grade Intersection (Existing)	Interchange (Proposed)
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	27	\$ -	\$ -
2022	-7	26	\$ -	\$ -
2023	-6	25	\$ -	\$ -
2024	-5	24	\$ -	\$ -
2025	-4	23	\$ -	\$ -
2026	-3	22	\$ -	\$ -
2027	-2	21	\$ -	\$ -
2028	-1	20	\$ -	\$ -
2029	0	19	\$ -	\$ -
2030	1	18	\$ -	\$ -
2031	2	17	\$ -	\$ -
2032	3	16	\$ -	\$ -
2033	4	15	\$ -	\$ -
2034	5	14	\$ -	\$ -
2035	6	13	\$ -	\$ -
2036	7	12	\$ -	\$ -
2037	8	11	\$ -	\$ -
2038	9	10	\$ -	\$ -
2039	10	9	\$ -	\$ -
2040	11	8	\$ -	\$ -
2041	12	7	\$ -	\$ -
2042	13	6	\$ -	\$ -
2043	14	5	\$ -	\$ -
2044	15	4	\$ -	\$ -
2045	16	3	\$ -	\$ -
2046	17	2	\$ -	\$ -
2047	18	1	\$ -	\$ -
Total:		\$ -	\$ -	\$ -

Table D.B.12.1 47th Ave Interchange Public Transit Travel Time Cost

Year	Project Year	Public Transit Travel Time Cost	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Table D.B.12.2 47th Ave Interchange Public Transit Travel Time Cost

Year	Project Year	Undiscounted Public Transit Travel Time Cost	
		At-Grade Intersection (Existing)	Interchange (Proposed)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Base Year For Discounting		2021	Table D.B.12.3 47th Ave Interchange Public Transit Travel Time Cost		
Public Transit Travel Time Discount Rate		7%	PV Public Transit Travel Time Cost		
Year	Project Year	Analysis Period	At-Grade Intersection (Existing)	Interchange (Proposed)	
2021	-8	27	\$ -	\$ -	-
2022	-7	26	\$ -	\$ -	-
2023	-6	25	\$ -	\$ -	-
2024	-5	24	\$ -	\$ -	-
2025	-4	23	\$ -	\$ -	-
2026	-3	22	\$ -	\$ -	-
2027	-2	21	\$ -	\$ -	-
2028	-1	20	\$ -	\$ -	-
2029	0	19	\$ -	\$ -	-
2030	1	18	\$ -	\$ -	-
2031	2	17	\$ -	\$ -	-
2032	3	16	\$ -	\$ -	-
2033	4	15	\$ -	\$ -	-
2034	5	14	\$ -	\$ -	-
2035	6	13	\$ -	\$ -	-
2036	7	12	\$ -	\$ -	-
2037	8	11	\$ -	\$ -	-
2038	9	10	\$ -	\$ -	-
2039	10	9	\$ -	\$ -	-
2040	11	8	\$ -	\$ -	-
2041	12	7	\$ -	\$ -	-
2042	13	6	\$ -	\$ -	-
2043	14	5	\$ -	\$ -	-
2044	15	4	\$ -	\$ -	-
2045	16	3	\$ -	\$ -	-
2046	17	2	\$ -	\$ -	-
2047	18	1	\$ -	\$ -	-
Total:			\$ -	\$ -	-
			\$		-

Table D.C.1.1 Mobility Hub Travel Time Benefit

		Travel Time Cost					
Year	Project Year	No Build			Build (Mobility Hub)		
		Light Vehicle	Heavy Vehicle	Total	Light Vehicle	Heavy Vehicle	Total
2021	-8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2022	-7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2023	-6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2024	-5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2025	-4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2026	-3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2027	-2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2028	-1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2029	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2030	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2031	2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2032	3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2033	4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2034	5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2035	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2036	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2037	8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2038	9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2039	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2040	11	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2041	12	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2042	13	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2043	14	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2044	15	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2045	16	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2046	17	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2047	18	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
		Total: \$ -			\$ -		

Table D.C.1.2 Mobility Hub Travel Time Benefit

		Undiscounted Travel Time Cost					
Year	Project Year	No Build			Build (Mobility Hub)		
		Light Vehicle	Heavy Vehicle	Total	Light Vehicle	Heavy Vehicle	Total
2021	-8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2022	-7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2023	-6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2024	-5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2025	-4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2026	-3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2027	-2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2028	-1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2029	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2030	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2031	2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2032	3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2033	4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2034	5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2035	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2036	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2037	8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2038	9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2039	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2040	11	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2041	12	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2042	13	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2043	14	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2044	15	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2045	16	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2046	17	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2047	18	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
		Total: \$ -			\$ -		

Base Year For Discounting		2021		Table D.C.1.3 Mobility Hub Travel Time Benefit					
Travel Time Discount Rate		7%		PV Travel Time Cost					
Year	Project Year	Analysis Period	No Build			Build (Mobility Hub)			
			Light Vehicle	Heavy Vehicle	Total	Light Vehicle	Heavy Vehicle	Total	
2021	-8	27	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2022	-7	26	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2023	-6	25	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2024	-5	24	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2025	-4	23	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2026	-3	22	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2027	-2	21	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2028	-1	20	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2029	0	19	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2030	1	18	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2031	2	17	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2032	3	16	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2033	4	15	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2034	5	14	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2035	6	13	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2036	7	12	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2037	8	11	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2038	9	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2039	10	9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2040	11	8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2041	12	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2042	13	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2043	14	5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2044	15	4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2045	16	3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2046	17	2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2047	18	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
			Total: \$			\$			



Table D.C.2.1 Mobility Hub Collision Reduction Benefit

Year	Project Year	Collision Cost	
		No Build	Build (Mobility Hub)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Table D.C.2.2 Mobility Hub Collision Reduction Benefit

Year	Project Year	Undiscounted Collision Cost	
		No Build	Build (Mobility Hub)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Base Year For Discounting		2021		Table D.C.2.3 Mobility Hub Collision Reduction Benefit	
Safety Discount Rate		7%		PV Collision Cost	
Year	Project Year	Analysis Period	No Build	Build (Mobility Hub)	
2021	-8	27	\$ -	\$ -	-
2022	-7	26	\$ -	\$ -	-
2023	-6	25	\$ -	\$ -	-
2024	-5	24	\$ -	\$ -	-
2025	-4	23	\$ -	\$ -	-
2026	-3	22	\$ -	\$ -	-
2027	-2	21	\$ -	\$ -	-
2028	-1	20	\$ -	\$ -	-
2029	0	19	\$ -	\$ -	-
2030	1	18	\$ -	\$ -	-
2031	2	17	\$ -	\$ -	-
2032	3	16	\$ -	\$ -	-
2033	4	15	\$ -	\$ -	-
2034	5	14	\$ -	\$ -	-
2035	6	13	\$ -	\$ -	-
2036	7	12	\$ -	\$ -	-
2037	8	11	\$ -	\$ -	-
2038	9	10	\$ -	\$ -	-
2039	10	9	\$ -	\$ -	-
2040	11	8	\$ -	\$ -	-
2041	12	7	\$ -	\$ -	-
2042	13	6	\$ -	\$ -	-
2043	14	5	\$ -	\$ -	-
2044	15	4	\$ -	\$ -	-
2045	16	3	\$ -	\$ -	-
2046	17	2	\$ -	\$ -	-
2047	18	1	\$ -	\$ -	-
Total:			\$ -	\$ -	-



Table D.C.3.1 Mobility Hub Vehicle Operating Benefit

		Vehicle Operating Cost						
Year	Project Year	No Build			Build (Mobility Hub)			
		Light Vehicle	Heavy Vehicle	Total	Light Vehicle	Heavy Vehicle	Total	
2021	-8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2022	-7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2023	-6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2024	-5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2025	-4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2026	-3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2027	-2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2028	-1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2029	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2030	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2031	2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2032	3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2033	4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2034	5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2035	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2036	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2037	8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2038	9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2039	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2040	11	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2041	12	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2042	13	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2043	14	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2044	15	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2045	16	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2046	17	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2047	18	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
		Total:			\$ -	\$ -		

Table D.C.3.2 Mobility Hub Vehicle Operating Benefit

		Undiscounted Vehicle Operating Cost					
Year	Project Year	No Build			Build (Mobility Hub)		
		Light Vehicle	Heavy Vehicle	Total	Light Vehicle	Heavy Vehicle	Total
2021	-8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2022	-7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2023	-6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2024	-5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2025	-4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2026	-3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2027	-2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2028	-1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2029	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2030	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2031	2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2032	3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2033	4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2034	5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2035	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2036	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2037	8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2038	9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2039	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2040	11	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2041	12	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2042	13	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2043	14	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2044	15	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2045	16	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2046	17	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2047	18	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
		Total: \$ -			\$ -		

Base Year For Discounting		2021		Table D.C.3.3 Mobility Hub Vehicle Operating Benefit					
Vehicle Operating Costs Discount Rate		7%		PV Vehicle Operating Cost					
Year	Project Year	Analysis Period	No Build			Build (Mobility Hub)			
			Light Vehicle	Heavy Vehicle	Total	Light Vehicle	Heavy Vehicle	Total	
2021	-8	27	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2022	-7	26	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2023	-6	25	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2024	-5	24	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2025	-4	23	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2026	-3	22	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2027	-2	21	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2028	-1	20	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2029	0	19	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2030	1	18	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2031	2	17	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2032	3	16	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2033	4	15	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2034	5	14	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2035	6	13	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2036	7	12	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2037	8	11	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2038	9	10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2039	10	9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2040	11	8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2041	12	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2042	13	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2043	14	5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2044	15	4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2045	16	3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2046	17	2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2047	18	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
			Total: \$			\$			



Table D.C.4.1 Mobility Hub Emissions Reduction Benefit

Year	Project Year	Emissions Cost	
		No Build	Build (Mobility Hub)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Table D.C.4.2 Mobility Hub Emissions Reduction Benefit

Year	Project Year	Undiscounted Emission Cost	
		No Build	Build (Mobility Hub)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Base Year For Discounting		2021		Table D.C.4.3 Mobility Hub Emissions Reduction Benefit	
Discount Rate Varies Depending on Emission Type			PV Emission Cost		
Year	Project Year	Analysis Period	No Build	Build (Mobility Hub)	
2021	-8	27	\$ -	\$ -	-
2022	-7	26	\$ -	\$ -	-
2023	-6	25	\$ -	\$ -	-
2024	-5	24	\$ -	\$ -	-
2025	-4	23	\$ -	\$ -	-
2026	-3	22	\$ -	\$ -	-
2027	-2	21	\$ -	\$ -	-
2028	-1	20	\$ -	\$ -	-
2029	0	19	\$ -	\$ -	-
2030	1	18	\$ -	\$ -	-
2031	2	17	\$ -	\$ -	-
2032	3	16	\$ -	\$ -	-
2033	4	15	\$ -	\$ -	-
2034	5	14	\$ -	\$ -	-
2035	6	13	\$ -	\$ -	-
2036	7	12	\$ -	\$ -	-
2037	8	11	\$ -	\$ -	-
2038	9	10	\$ -	\$ -	-
2039	10	9	\$ -	\$ -	-
2040	11	8	\$ -	\$ -	-
2041	12	7	\$ -	\$ -	-
2042	13	6	\$ -	\$ -	-
2043	14	5	\$ -	\$ -	-
2044	15	4	\$ -	\$ -	-
2045	16	3	\$ -	\$ -	-
2046	17	2	\$ -	\$ -	-
2047	18	1	\$ -	\$ -	-
Total:			\$ -	\$ -	-
			\$ -	\$ -	-



Table D.C.5.1 Mobility Hub Maintenance Benefit

Year	Project Year	Uninflated Maintenance Cost	
		No Build	Build (Mobility Hub)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Table D.C.5.2 Mobility Hub Maintenance Benefit

Current Year	2023	Inflated (to Current Year) Maintenance Cost	
Inflation Rate	4%	No Build	Build (Mobility Hub)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Table D.C.5.3 Mobility Hub Maintenance Benefit

Year	Project Year	Undiscounted Maintenance Cost	
		No Build	Build (Mobility Hub)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Base Year For Discounting		2021		Table D.C.5.4 Mobility Hub Maintenance Benefit	
Maintenance Discount Rate		7%		PV Maintenance Cost	
Year	Project Year	Analysis Period	No Build	Build (Mobility Hub)	
2021	-8	27	\$ -	\$ -	
2022	-7	26	\$ -	\$ -	
2023	-6	25	\$ -	\$ -	
2024	-5	24	\$ -	\$ -	
2025	-4	23	\$ -	\$ -	
2026	-3	22	\$ -	\$ -	
2027	-2	21	\$ -	\$ -	
2028	-1	20	\$ -	\$ -	
2029	0	19	\$ -	\$ -	
2030	1	18	\$ -	\$ -	
2031	2	17	\$ -	\$ -	
2032	3	16	\$ -	\$ -	
2033	4	15	\$ -	\$ -	
2034	5	14	\$ -	\$ -	
2035	6	13	\$ -	\$ -	
2036	7	12	\$ -	\$ -	
2037	8	11	\$ -	\$ -	
2038	9	10	\$ -	\$ -	
2039	10	9	\$ -	\$ -	
2040	11	8	\$ -	\$ -	
2041	12	7	\$ -	\$ -	
2042	13	6	\$ -	\$ -	
2043	14	5	\$ -	\$ -	
2044	15	4	\$ -	\$ -	
2045	16	3	\$ -	\$ -	
2046	17	2	\$ -	\$ -	
2047	18	1	\$ -	\$ -	
Total:			\$ -	\$ -	



Table D.C.6.1 Mobility Hub Design and Construction Cost

Year	Project Year	Uninflated Construction Cost	
		No Build	Build (Mobility Hub)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ 699,300.00
2025	-4	\$ -	\$ 699,300.00
2026	-3	\$ -	\$ 17,826,580.00
2027	-2	\$ -	\$ 6,758,495.00
2028	-1	\$ -	\$ 819,625.00
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ 26,803,300.00

Table D.C.6.2 Mobility Hub Design and Construction Cost

Construction Costs (Cost in 2026 Dollars)		Inflated (to Project Year 0) Construction Cost	
Inflation Rate	4%	No Build	Build (Mobility Hub)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ 646,542.16
2025	-4	\$ -	\$ 672,403.85
2026	-3	\$ -	\$ 17,826,580.00
2027	-2	\$ -	\$ 7,028,834.80
2028	-1	\$ -	\$ 886,506.40
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ 27,060,867.21

Table D.C.6.3 Mobility Hub Design and Construction Cost

Year	Project Year	Undiscounted Construction Cost	
		No Build	Build (Mobility Hub)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ 646,542.16
2025	-4	\$ -	\$ 672,403.85
2026	-3	\$ -	\$ 17,826,580.00
2027	-2	\$ -	\$ 7,028,834.80
2028	-1	\$ -	\$ 886,506.40
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ 27,060,867.21

Base Year For Discounting		2021		Table D.C.6.4 Mobility Hub Design and Construction Cost	
Construction Discount Rate		7%		PV Construction Cost	
Year	Project Year	Analysis Period	No Build	Build (Mobility Hub)	
2021	-8	27	\$ -	\$ -	
2022	-7	26	\$ -	\$ -	
2023	-6	25	\$ -	\$ -	
2024	-5	24	\$ -	\$ 527,770.99	
2025	-4	23	\$ -	\$ 512,973.67	
2026	-3	22	\$ -	\$ 12,710,105.17	
2027	-2	21	\$ -	\$ 4,683,609.41	
2028	-1	20	\$ -	\$ 552,071.63	
2029	0	19	\$ -	\$ -	
2030	1	18	\$ -	\$ -	
2031	2	17	\$ -	\$ -	
2032	3	16	\$ -	\$ -	
2033	4	15	\$ -	\$ -	
2034	5	14	\$ -	\$ -	
2035	6	13	\$ -	\$ -	
2036	7	12	\$ -	\$ -	
2037	8	11	\$ -	\$ -	
2038	9	10	\$ -	\$ -	
2039	10	9	\$ -	\$ -	
2040	11	8	\$ -	\$ -	
2041	12	7	\$ -	\$ -	
2042	13	6	\$ -	\$ -	
2043	14	5	\$ -	\$ -	
2044	15	4	\$ -	\$ -	
2045	16	3	\$ -	\$ -	
2046	17	2	\$ -	\$ -	
2047	18	1	\$ -	\$ -	
Total:			\$ -	\$ 18,986,530.88	

Table D.C.6.5 Mobility Hub Yearly Construction Costs (Cost in 2026 Dollars)

Yearly Construction Cost								
Year	Engineering	ROW	Grading and Draining	Subbase/Base	Surfacing	Major Structures	Lighting/Signals	Other Costs
2021	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2022	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2023	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2024	\$ 699,300.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2025	\$ 699,300.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2026	\$ 1,048,950.00	\$ -	\$ 5,763,340.00	\$ 1,201,050.00	\$ 2,345,490.00	\$ 3,578,400.00	\$ 541,200.00	\$ 3,348,150.00
2027	\$ 944,055.00	\$ -	\$ 1,017,060.00	\$ 400,350.00	\$ 1,005,210.00	\$ 397,600.00	\$ 315,700.00	\$ 2,678,520.00
2028	\$ 104,895.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 45,100.00	\$ 669,630.00
2029	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2030	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2031	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2032	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2033	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2034	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2035	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2036	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2037	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2038	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2039	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2040	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2041	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2043	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2044	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2046	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2047	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total:	\$ 3,496,500.00	\$ -	\$ 6,780,400.00	\$ 1,601,400.00	\$ 3,350,700.00	\$ 3,976,000.00	\$ 902,000.00	\$ 6,696,300.00
								\$ 26,803,300.00

Table D.C.7.1

Mobility Hub Salvage Value

Salvage Year		2045		PV Salvage Value	
Year	Project Year	Analysis Period	No Build	Build (Mobility Hub)	
2021	-8	27	\$ -	\$ -	-
2022	-7	26	\$ -	\$ -	-
2023	-6	25	\$ -	\$ -	-
2024	-5	24	\$ -	\$ -	-
2025	-4	23	\$ -	\$ -	-
2026	-3	22	\$ -	\$ 6,315,721.70	
2027	-2	21	\$ -	\$ 1,247,308.04	
2028	-1	20	\$ -	\$ -	-
2029	0	19	\$ -	\$ -	-
2030	1	18	\$ -	\$ -	-
2031	2	17	\$ -	\$ -	-
2032	3	16	\$ -	\$ -	-
2033	4	15	\$ -	\$ -	-
2034	5	14	\$ -	\$ -	-
2035	6	13	\$ -	\$ -	-
2036	7	12	\$ -	\$ -	-
2037	8	11	\$ -	\$ -	-
2038	9	10	\$ -	\$ -	-
2039	10	9	\$ -	\$ -	-
2040	11	8	\$ -	\$ -	-
2041	12	7	\$ -	\$ -	-
2042	13	6	\$ -	\$ -	-
2043	14	5	\$ -	\$ -	-
2044	15	4	\$ -	\$ -	-
2045	16	3	\$ -	\$ -	-
2046	17	2	\$ -	\$ -	-
2047	18	1	\$ -	\$ -	-
Total:			\$ -	\$ 7,563,029.74	
Construction Discount Rate			7%	\$ 1,491,025.75	



Table D.C.8.1 Mobility Hub Pedestrian Benefit

Year	Project Year	Pedestrian Benefit	
		No Build	Build (Mobility Hub)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Table D.C.8.2 Mobility Hub Pedestrian Benefit

Base Year For Discounting		2021	PV Pedestrian Benefit	
Pedestrian Facilities Discount Rate		7%	No Build	Build (Mobility Hub)
Year	Project Year	Analysis Period	No Build	Build (Mobility Hub)
2021	-8	27	\$ -	\$ -
2022	-7	26	\$ -	\$ -
2023	-6	25	\$ -	\$ -
2024	-5	24	\$ -	\$ -
2025	-4	23	\$ -	\$ -
2026	-3	22	\$ -	\$ -
2027	-2	21	\$ -	\$ -
2028	-1	20	\$ -	\$ -
2029	0	19	\$ -	\$ -
2030	1	18	\$ -	\$ -
2031	2	17	\$ -	\$ -
2032	3	16	\$ -	\$ -
2033	4	15	\$ -	\$ -
2034	5	14	\$ -	\$ -
2035	6	13	\$ -	\$ -
2036	7	12	\$ -	\$ -
2037	8	11	\$ -	\$ -
2038	9	10	\$ -	\$ -
2039	10	9	\$ -	\$ -
2040	11	8	\$ -	\$ -
2041	12	7	\$ -	\$ -
2042	13	6	\$ -	\$ -
2043	14	5	\$ -	\$ -
2044	15	4	\$ -	\$ -
2045	16	3	\$ -	\$ -
2046	17	2	\$ -	\$ -
2047	18	1	\$ -	\$ -
Total:		\$ -	\$ -	\$ -



Table D.C.9.1 Mobility Hub Health Benefit

Year	Project Year	Health Benefit	
		No Build	Build (Mobility Hub)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Table D.C.9.2 Mobility Hub Health Benefit

Base Year For Discounting		2021	PV Health Benefit	
Health Improvements Discount Rate		7%	No Build	Build (Mobility Hub)
Year	Project Year	Analysis Period	No Build	Build (Mobility Hub)
2021	-8	27	\$ -	\$ -
2022	-7	26	\$ -	\$ -
2023	-6	25	\$ -	\$ -
2024	-5	24	\$ -	\$ -
2025	-4	23	\$ -	\$ -
2026	-3	22	\$ -	\$ -
2027	-2	21	\$ -	\$ -
2028	-1	20	\$ -	\$ -
2029	0	19	\$ -	\$ -
2030	1	18	\$ -	\$ -
2031	2	17	\$ -	\$ -
2032	3	16	\$ -	\$ -
2033	4	15	\$ -	\$ -
2034	5	14	\$ -	\$ -
2035	6	13	\$ -	\$ -
2036	7	12	\$ -	\$ -
2037	8	11	\$ -	\$ -
2038	9	10	\$ -	\$ -
2039	10	9	\$ -	\$ -
2040	11	8	\$ -	\$ -
2041	12	7	\$ -	\$ -
2042	13	6	\$ -	\$ -
2043	14	5	\$ -	\$ -
2044	15	4	\$ -	\$ -
2045	16	3	\$ -	\$ -
2046	17	2	\$ -	\$ -
2047	18	1	\$ -	\$ -
Total:		\$ -	\$ -	\$ -



Table D.C.10.1 Mobility Hub Bicycling Benefit

Year	Project Year	Bicycle Benefit	
		No Build	Build (Mobility Hub)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ -
2029	0	\$ -	\$ -
2030	1	\$ -	\$ -
2031	2	\$ -	\$ -
2032	3	\$ -	\$ -
2033	4	\$ -	\$ -
2034	5	\$ -	\$ -
2035	6	\$ -	\$ -
2036	7	\$ -	\$ -
2037	8	\$ -	\$ -
2038	9	\$ -	\$ -
2039	10	\$ -	\$ -
2040	11	\$ -	\$ -
2041	12	\$ -	\$ -
2042	13	\$ -	\$ -
2043	14	\$ -	\$ -
2044	15	\$ -	\$ -
2045	16	\$ -	\$ -
2046	17	\$ -	\$ -
2047	18	\$ -	\$ -
Total:		\$ -	\$ -

Table D.C.10.2 Mobility Hub Bicycling Benefit

Base Year For Discounting		2021	PV Bicycle Benefit	
Cycling Facilities Discount Rate		7%	No Build	Build (Mobility Hub)
Year	Project Year	Analysis Period	No Build	Build (Mobility Hub)
2021	-8	27	\$ -	\$ -
2022	-7	26	\$ -	\$ -
2023	-6	25	\$ -	\$ -
2024	-5	24	\$ -	\$ -
2025	-4	23	\$ -	\$ -
2026	-3	22	\$ -	\$ -
2027	-2	21	\$ -	\$ -
2028	-1	20	\$ -	\$ -
2029	0	19	\$ -	\$ -
2030	1	18	\$ -	\$ -
2031	2	17	\$ -	\$ -
2032	3	16	\$ -	\$ -
2033	4	15	\$ -	\$ -
2034	5	14	\$ -	\$ -
2035	6	13	\$ -	\$ -
2036	7	12	\$ -	\$ -
2037	8	11	\$ -	\$ -
2038	9	10	\$ -	\$ -
2039	10	9	\$ -	\$ -
2040	11	8	\$ -	\$ -
2041	12	7	\$ -	\$ -
2042	13	6	\$ -	\$ -
2043	14	5	\$ -	\$ -
2044	15	4	\$ -	\$ -
2045	16	3	\$ -	\$ -
2046	17	2	\$ -	\$ -
2047	18	1	\$ -	\$ -
Total:		\$ -	\$ -	\$ -



Table D.C.11.1 Mobility Hub Transit Amenity Benefit

Year	Project Year	Bicycle Benefit	
		No Build	Build (Mobility Hub)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ 1,847,549.70
2029	0	\$ -	\$ 1,905,766.82
2030	1	\$ -	\$ 1,963,983.93
2031	2	\$ -	\$ 2,022,201.05
2032	3	\$ -	\$ 2,080,418.16
2033	4	\$ -	\$ 2,138,635.28
2034	5	\$ -	\$ 2,196,852.39
2035	6	\$ -	\$ 2,255,069.51
2036	7	\$ -	\$ 2,313,286.63
2037	8	\$ -	\$ 2,371,503.74
2038	9	\$ -	\$ 2,429,720.86
2039	10	\$ -	\$ 2,487,937.97
2040	11	\$ -	\$ 2,546,155.09
2041	12	\$ -	\$ 2,604,372.21
2042	13	\$ -	\$ 2,662,589.32
2043	14	\$ -	\$ 2,720,806.44
2044	15	\$ -	\$ 2,779,023.55
2045	16	\$ -	\$ 2,837,240.67
2046	17	\$ -	\$ 2,895,457.78
2047	18	\$ -	\$ 2,953,674.90
Total:		\$ -	\$ 48,012,246.00

Table D.C.11.2 Mobility Hub Transit Amenity Benefit

Base Year For Discounting		2021	PV Bicycle Benefit	
Transit Amenity Discount Rate		7%	No Build	Build (Mobility Hub)
Year	Project Year	Analysis Period	No Build	Build (Mobility Hub)
2021	-8	27	\$ -	\$ -
2022	-7	26	\$ -	\$ -
2023	-6	25	\$ -	\$ -
2024	-5	24	\$ -	\$ -
2025	-4	23	\$ -	\$ -
2026	-3	22	\$ -	\$ -
2027	-2	21	\$ -	\$ -
2028	-1	20	\$ -	\$ 1,150,561.10
2029	0	19	\$ -	\$ 1,109,173.64
2030	1	18	\$ -	\$ 1,068,277.13
2031	2	17	\$ -	\$ 1,027,984.47
2032	3	16	\$ -	\$ 988,391.68
2033	4	15	\$ -	\$ 949,579.64
2034	5	14	\$ -	\$ 911,615.64
2035	6	13	\$ -	\$ 874,554.84
2036	7	12	\$ -	\$ 838,441.53
2037	8	11	\$ -	\$ 803,310.37
2038	9	10	\$ -	\$ 769,187.40
2039	10	9	\$ -	\$ 736,091.07
2040	11	8	\$ -	\$ 704,033.10
2041	12	7	\$ -	\$ 673,019.27
2042	13	6	\$ -	\$ 643,050.17
2043	14	5	\$ -	\$ 614,121.83
2044	15	4	\$ -	\$ 586,226.36
2045	16	3	\$ -	\$ 559,352.41
2046	17	2	\$ -	\$ 533,485.72
2047	18	1	\$ -	\$ 508,609.51
Total:			\$ -	\$ 16,049,066.86

Table D.C.12.1 Mobility Hub Public Transit Travel Time Benefit

Year	Project Year	Public Transit Travel Time Cost	
		No Build	Build (Mobility Hub)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ 11,501,249.28	\$ 9,254,911.53
2029	0	\$ 11,863,658.78	\$ 9,546,537.92
2030	1	\$ 12,226,068.28	\$ 9,838,164.32
2031	2	\$ 12,588,477.78	\$ 10,129,790.71
2032	3	\$ 12,950,887.28	\$ 10,421,417.10
2033	4	\$ 13,313,296.77	\$ 10,713,043.50
2034	5	\$ 13,675,706.27	\$ 11,004,669.89
2035	6	\$ 14,038,115.77	\$ 11,296,296.29
2036	7	\$ 14,400,525.27	\$ 11,587,922.68
2037	8	\$ 14,762,934.77	\$ 11,879,549.07
2038	9	\$ 15,125,344.27	\$ 12,171,175.47
2039	10	\$ 15,487,753.77	\$ 12,462,801.86
2040	11	\$ 15,850,163.27	\$ 12,754,428.25
2041	12	\$ 16,212,572.77	\$ 13,046,054.65
2042	13	\$ 16,574,982.27	\$ 13,337,681.04
2043	14	\$ 16,937,391.76	\$ 13,629,307.44
2044	15	\$ 17,299,801.26	\$ 13,920,933.83
2045	16	\$ 17,662,210.76	\$ 14,212,560.22
2046	17	\$ 18,024,620.26	\$ 14,504,186.62
2047	18	\$ 18,387,029.76	\$ 14,795,813.01
Total:		\$ 298,882,790.40	\$ 240,507,245.40 \$ (58,375,545.00)

Table D.C.12.2 Mobility Hub Public Transit Travel Time Benefit

Year	Project Year	Undiscounted Public Transit Travel Time Benefit	
		No Build	Build (Mobility Hub)
2021	-8	\$ -	\$ -
2022	-7	\$ -	\$ -
2023	-6	\$ -	\$ -
2024	-5	\$ -	\$ -
2025	-4	\$ -	\$ -
2026	-3	\$ -	\$ -
2027	-2	\$ -	\$ -
2028	-1	\$ -	\$ 2,246,337.75
2029	0	\$ -	\$ 2,317,120.86
2030	1	\$ -	\$ 2,387,903.96
2031	2	\$ -	\$ 2,458,687.07
2032	3	\$ -	\$ 2,529,470.17
2033	4	\$ -	\$ 2,600,253.28
2034	5	\$ -	\$ 2,671,036.38
2035	6	\$ -	\$ 2,741,819.49
2036	7	\$ -	\$ 2,812,602.59
2037	8	\$ -	\$ 2,883,385.70
2038	9	\$ -	\$ 2,954,168.80
2039	10	\$ -	\$ 3,024,951.91
2040	11	\$ -	\$ 3,095,735.01
2041	12	\$ -	\$ 3,166,518.12
2042	13	\$ -	\$ 3,237,301.22
2043	14	\$ -	\$ 3,308,084.33
2044	15	\$ -	\$ 3,378,867.43
2045	16	\$ -	\$ 3,449,650.54
2046	17	\$ -	\$ 3,520,433.64
2047	18	\$ -	\$ 3,591,216.75
Total:		\$ -	\$ 58,375,545.00 \$ 58,375,545.00

Base Year For Discounting		2021		Table D.C.12.3 Mobility Hub Public Transit Travel Time Benefit	
Public Transit Travel Time Discount Rate		7%		PV Public Transit Travel Time Benefit	
Year	Project Year	Analysis Period	No Build	Build (Mobility Hub)	
2021	-8	27	\$ -	\$ -	
2022	-7	26	\$ -	\$ -	
2023	-6	25	\$ -	\$ -	
2024	-5	24	\$ -	\$ -	
2025	-4	23	\$ -	\$ -	
2026	-3	22	\$ -	\$ -	
2027	-2	21	\$ -	\$ -	
2028	-1	20	\$ -	\$ 1,398,906.25	
2029	0	19	\$ -	\$ 1,348,585.43	
2030	1	18	\$ -	\$ 1,298,861.54	
2031	2	17	\$ -	\$ 1,249,871.83	
2032	3	16	\$ -	\$ 1,201,733.06	
2033	4	15	\$ -	\$ 1,154,543.55	
2034	5	14	\$ -	\$ 1,108,385.14	
2035	6	13	\$ -	\$ 1,063,324.87	
2036	7	12	\$ -	\$ 1,019,416.61	
2037	8	11	\$ -	\$ 976,702.49	
2038	9	10	\$ -	\$ 935,214.19	
2039	10	9	\$ -	\$ 894,974.12	
2040	11	8	\$ -	\$ 855,996.53	
2041	12	7	\$ -	\$ 818,288.45	
2042	13	6	\$ -	\$ 781,850.61	
2043	14	5	\$ -	\$ 746,678.18	
2044	15	4	\$ -	\$ 712,761.55	
2045	16	3	\$ -	\$ 680,086.94	
2046	17	2	\$ -	\$ 648,637.00	
2047	18	1	\$ -	\$ 618,391.34	
Total:			\$ -	\$ 19,513,209.70	
				\$ 19,513,209.70	

Table D.13.1

Analysis Period	
Initial Year	2028
Future Year	2047
Base Year For Discounting	2021
<i>Analysis Period (years)</i>	20

Table D.13.2

Discount Rates			
Vehicle Operating Costs Discount Rate	7%	Pedestrian Facilities Discount Rate	7%
Travel Time Savings Discount Rate	7%	Health Improvements Discount Rate	7%
Safety Discount Rate	7%	Cycling Facilities Discount Rate	7%
Construction Discount Rate	7%	Transit Amenity Discount Rate	7%
Inflation Rate	4%	Public Transit Travel Time Discount Rate	7%
Maintenance Discount Rate	7%		

Table D.13.3

Construction Timeframe			
Engineering Start	2024	Construction Start	2026
Construction Completion	2028		
<i>Construction Length</i>	5		
Salvage Year	2045		
Project Year 0	2029		

Table D.13.4

Component Service Life (5 Year Intervals, 0-100 years)	
Engineering	0
Right-of-Way	100
Grading and Draining	50
Subbase/Base	40
Surfacing	25
Major Structures	60
Lighting/Signals	20
Other Costs	0