

**ANEXO 4. COSTO DE OPERACIÓN POR TIPO DE VEHICULOS ESCENARIO SIN PROYECTO**

	TPD			COSTO DE OPERACIÓN DIARIO ESTADO ACTUAL			COSTO OPERACIÓN ANUAL ACTUAL		
	AUTOS	BUSES	CAMIONES	AUTOS	BUSES	CAMIONES	AUTOS	BUSES	CAMIONES
	2016	15434	3434	1564	\$ 1.329.329.483	\$ 1.051.627.516	\$ 647.588.636	\$ 485.205.261.243	\$ 383.844.043.306
2017	15768	3602	1610	\$ 1.358.125.843	\$ 1.103.057.718	\$ 666.588.690	\$ 495.715.932.564	\$ 402.616.067.116	\$ 243.304.871.971
2018	16103	3770	1656	\$ 1.386.922.202	\$ 1.154.487.920	\$ 685.588.745	\$ 506.226.603.886	\$ 421.388.090.927	\$ 250.239.891.816
2019	16437	3938	1702	\$ 1.415.718.562	\$ 1.205.918.123	\$ 704.588.799	\$ 516.737.275.207	\$ 440.160.114.737	\$ 257.174.911.661
2020	16771	4106	1748	\$ 1.444.514.922	\$ 1.257.348.325	\$ 723.588.853	\$ 527.247.946.528	\$ 458.932.138.547	\$ 264.109.931.506
2021	17106	4274	1794	\$ 1.473.311.282	\$ 1.308.778.527	\$ 742.588.908	\$ 537.758.617.850	\$ 477.704.162.358	\$ 271.044.951.350
2022	17440	4441	1840	\$ 1.502.107.642	\$ 1.360.208.729	\$ 761.588.962	\$ 548.269.289.171	\$ 496.476.186.168	\$ 277.979.971.195
2023	17774	4609	1886	\$ 1.530.904.001	\$ 1.411.638.931	\$ 780.589.017	\$ 558.779.960.492	\$ 515.248.209.979	\$ 284.914.991.040
2024	18109	4777	1932	\$ 1.559.700.361	\$ 1.463.069.134	\$ 799.589.071	\$ 569.290.631.814	\$ 534.020.233.789	\$ 291.850.010.885
2025	18443	4945	1978	\$ 1.588.496.721	\$ 1.514.499.336	\$ 818.589.125	\$ 579.801.303.135	\$ 552.792.257.600	\$ 298.785.030.730
2026	18777	5113	2023	\$ 1.617.293.081	\$ 1.565.929.538	\$ 837.589.180	\$ 590.311.974.456	\$ 571.564.281.410	\$ 305.720.050.575
2027	19112	5281	2069	\$ 1.646.089.440	\$ 1.617.359.740	\$ 856.589.234	\$ 600.822.645.777	\$ 590.336.305.220	\$ 312.655.070.420
2028	19446	5449	2115	\$ 1.674.885.800	\$ 1.668.789.943	\$ 875.589.288	\$ 611.333.317.099	\$ 609.108.329.031	\$ 319.590.090.264
2029	19780	5617	2161	\$ 1.703.682.160	\$ 1.720.220.145	\$ 894.589.343	\$ 621.843.988.420	\$ 627.880.352.841	\$ 326.525.110.109
2030	20115	5785	2207	\$ 1.732.478.520	\$ 1.771.650.347	\$ 913.589.397	\$ 632.354.659.741	\$ 646.652.376.652	\$ 333.460.129.954
2031	20449	5953	2253	\$ 1.761.274.880	\$ 1.823.080.549	\$ 932.589.452	\$ 642.865.331.063	\$ 665.424.400.462	\$ 340.395.149.799
2032	20783	6121	2299	\$ 1.790.071.239	\$ 1.874.510.751	\$ 951.589.506	\$ 653.376.002.384	\$ 684.196.424.273	\$ 347.330.169.644
2033	21118	6289	2345	\$ 1.818.867.599	\$ 1.925.940.954	\$ 970.589.560	\$ 663.886.673.705	\$ 702.968.448.083	\$ 354.265.189.489
2034	21452	6457	2391	\$ 1.847.663.959	\$ 1.977.371.156	\$ 989.589.615	\$ 674.397.345.027	\$ 721.740.471.894	\$ 361.200.209.333
2035	21786	6625	2437	\$ 1.876.460.319	\$ 2.028.801.358	\$ 1.008.589.669	\$ 684.908.016.348	\$ 740.512.495.704	\$ 368.135.229.178
2036	22121	6793	2482	\$ 1.905.256.679	\$ 2.080.231.560	\$ 1.027.589.723	\$ 695.418.687.669	\$ 759.284.519.514	\$ 375.070.249.023
2037	22455	6960	2528	\$ 1.934.053.038	\$ 2.131.661.763	\$ 1.046.589.778	\$ 705.929.358.991	\$ 778.056.543.325	\$ 382.005.268.868
2038	22789	7128	2574	\$ 1.962.849.398	\$ 2.183.091.965	\$ 1.065.589.832	\$ 716.440.030.312	\$ 796.828.567.135	\$ 388.940.288.713
2039	23124	7296	2620	\$ 1.991.645.758	\$ 2.234.522.167	\$ 1.084.589.886	\$ 726.950.701.633	\$ 815.600.590.946	\$ 395.875.308.558
2040	23458	7464	2666	\$ 2.020.442.118	\$ 2.285.952.369	\$ 1.103.589.941	\$ 737.461.372.954	\$ 834.372.614.756	\$ 402.810.328.402

Costo de operación vehicular. Fuente: Elaboración propia

**ANEXO 4. COSTOS DE OPERACIÓN ANUAL CON PROYECTO**

	COSTO TOTAL ANUAL TRÁFICO NORMAL			COSTO TOTAL ANUAL TRÁFICO DESVIADO			COSTO TOTAL ANUAL TRÁFICO GENERADO		
	AUTOS	BUSES	CAMIONES	AUTOS	BUSES	CAMIONES	AUTOS	BUSES	CAMIONES
2016	\$ 410.447.690.745	\$ 285.312.317.203	\$ 188.581.254.773	\$ 48.520.526.124	\$ 10.795.077.927	\$ 4.918.155.152	\$ 13.681.589.692	\$ 9.510.410.573	\$ 6.286.041.826
2017	\$ 419.338.939.700	\$ 299.265.613.354	\$ 194.114.171.650	\$ 49.571.593.256	\$ 11.323.014.894	\$ 5.062.452.334	\$ 13.977.964.657	\$ 9.975.520.445	\$ 6.470.472.388
2018	\$ 428.230.188.655	\$ 313.218.909.504	\$ 199.647.088.528	\$ 50.622.660.389	\$ 11.850.951.861	\$ 5.206.749.516	\$ 14.274.339.622	\$ 10.440.630.317	\$ 6.654.902.951
2019	\$ 437.121.437.610	\$ 327.172.205.655	\$ 205.180.005.406	\$ 51.673.727.521	\$ 12.378.888.827	\$ 5.351.046.698	\$ 14.570.714.587	\$ 10.905.740.189	\$ 6.839.333.514
2020	\$ 446.012.686.566	\$ 341.125.501.806	\$ 210.712.922.284	\$ 52.724.794.653	\$ 12.906.825.794	\$ 5.495.343.880	\$ 14.867.089.552	\$ 11.370.850.060	\$ 7.023.764.076
2021	\$ 454.903.935.521	\$ 355.078.797.957	\$ 216.245.839.161	\$ 53.775.861.785	\$ 13.434.762.760	\$ 5.639.641.062	\$ 15.163.464.517	\$ 11.835.959.932	\$ 7.208.194.639
2022	\$ 463.795.184.476	\$ 369.032.094.107	\$ 221.778.756.039	\$ 54.826.928.917	\$ 13.962.699.727	\$ 5.783.938.244	\$ 15.459.839.483	\$ 12.301.069.804	\$ 7.392.625.201
2023	\$ 472.686.433.431	\$ 382.985.390.258	\$ 227.311.672.917	\$ 55.877.996.049	\$ 14.490.636.694	\$ 5.928.235.426	\$ 15.756.214.448	\$ 12.766.179.675	\$ 7.577.055.764
2024	\$ 481.577.682.386	\$ 396.938.686.409	\$ 232.844.589.794	\$ 56.929.063.181	\$ 15.018.573.660	\$ 6.072.532.608	\$ 16.052.589.413	\$ 13.231.289.547	\$ 7.761.486.326
2025	\$ 490.468.931.341	\$ 410.891.982.560	\$ 238.377.506.672	\$ 57.980.130.313	\$ 15.546.510.627	\$ 6.216.829.790	\$ 16.348.964.378	\$ 13.696.399.419	\$ 7.945.916.889
2026	\$ 499.360.180.296	\$ 424.845.278.710	\$ 243.910.423.550	\$ 59.031.197.446	\$ 16.074.447.594	\$ 6.361.126.972	\$ 16.645.339.343	\$ 14.161.509.290	\$ 8.130.347.452
2027	\$ 508.251.429.251	\$ 438.798.574.861	\$ 249.443.340.428	\$ 60.082.264.578	\$ 16.602.384.560	\$ 6.505.424.154	\$ 16.941.714.308	\$ 14.626.619.162	\$ 8.314.778.014
2028	\$ 517.142.678.206	\$ 452.751.871.012	\$ 254.976.257.305	\$ 61.133.331.710	\$ 17.130.321.527	\$ 6.649.721.336	\$ 17.238.089.274	\$ 15.091.729.034	\$ 8.499.208.577
2029	\$ 526.033.927.161	\$ 466.705.167.163	\$ 260.509.174.183	\$ 62.184.398.842	\$ 17.658.258.494	\$ 6.794.018.518	\$ 17.534.464.239	\$ 15.556.838.905	\$ 8.683.639.139
2030	\$ 534.925.176.116	\$ 480.658.463.314	\$ 266.042.091.061	\$ 63.235.465.974	\$ 18.186.195.460	\$ 6.938.315.700	\$ 17.830.839.204	\$ 16.021.948.777	\$ 8.868.069.702
2031	\$ 543.816.425.071	\$ 494.611.759.464	\$ 271.575.007.939	\$ 64.286.533.106	\$ 18.714.132.427	\$ 7.082.612.882	\$ 18.127.214.169	\$ 16.487.058.649	\$ 9.052.500.265
2032	\$ 552.707.674.026	\$ 508.565.055.615	\$ 277.107.924.816	\$ 65.337.600.238	\$ 19.242.069.393	\$ 7.226.910.064	\$ 18.423.589.134	\$ 16.952.168.521	\$ 9.236.930.827
2033	\$ 561.598.922.981	\$ 522.518.351.766	\$ 282.640.841.694	\$ 66.388.667.371	\$ 19.770.006.360	\$ 7.371.207.246	\$ 18.719.964.099	\$ 17.417.278.392	\$ 9.421.361.390
2034	\$ 570.490.171.936	\$ 536.471.647.917	\$ 288.173.758.572	\$ 67.439.734.503	\$ 20.297.943.327	\$ 7.515.504.428	\$ 19.016.339.065	\$ 17.882.388.264	\$ 9.605.791.952
2035	\$ 579.381.420.891	\$ 550.424.944.067	\$ 293.706.675.449	\$ 68.490.801.635	\$ 20.825.880.293	\$ 7.659.801.610	\$ 19.312.714.030	\$ 18.347.498.136	\$ 9.790.222.515
2036	\$ 588.272.669.846	\$ 564.378.240.218	\$ 299.239.592.327	\$ 69.541.868.767	\$ 21.353.817.260	\$ 7.804.098.792	\$ 19.609.088.995	\$ 18.812.608.007	\$ 9.974.653.078
2037	\$ 597.163.918.801	\$ 578.331.536.369	\$ 304.772.509.205	\$ 70.592.935.899	\$ 21.881.754.227	\$ 7.948.395.975	\$ 19.905.463.960	\$ 19.277.717.879	\$ 10.159.083.640
2038	\$ 606.055.167.756	\$ 592.284.832.520	\$ 310.305.426.083	\$ 71.644.003.031	\$ 22.409.691.193	\$ 8.092.693.157	\$ 20.201.838.925	\$ 19.742.827.751	\$ 10.343.514.203
2039	\$ 614.946.416.711	\$ 606.238.128.670	\$ 315.838.342.960	\$ 72.695.070.163	\$ 22.937.628.160	\$ 8.236.990.339	\$ 20.498.213.890	\$ 20.207.937.622	\$ 10.527.944.765
2040	\$ 623.837.665.666	\$ 620.191.424.821	\$ 321.371.259.838	\$ 73.746.137.295	\$ 23.465.565.127	\$ 8.381.287.521	\$ 20.794.588.856	\$ 20.673.047.494	\$ 10.712.375.328

Costos de operación anual situación con proyecto. Fuente Elaboración propia