

ANEXO 5

CÁLCULOS DEL AHORRO DE TIEMPO

En este apartado se muestran como se calcularon los costos unitarios de tiempo de los diferentes tipos de vehículos que transitan en la carretera en estudio a diferentes tasas de crecimiento vehicular.

Para calcular el tiempo en transitar la carretera que hace un usuario se parte de la fórmula expresada como la razón de la distancia recorrida entre el tiempo que se tarda en recorrerla,

$$V = d/t \quad \text{donde: } V = \text{velocidad del vehículo}$$
$$d = \text{distancia del tramo}$$
$$t = \text{tiempo en recorrer la distancia}$$

despejando t:

$$t = V/d$$

Para ello se parte de las velocidades determinadas en el anexo de cálculo y proyección de la velocidad.

Para hacer la valoración del tiempo de recorrido, se multiplica por el valor del tiempo de los usuarios y se multiplica por la tasa de ocupación vehicular.

$$\begin{array}{l} \text{Costo del tiempo} \\ \text{de un vehículo} \end{array} = (T) * (\text{valor del tiempo del vehículo}) * (\text{tasa de ocupación vehicular})$$

Para la determinación de los ahorros en costo de tiempo de los usuarios se hace restando el costo del tiempo de circular en el sin proyecto (s/p) contra el costo del tiempo de circular en el con proyecto (c/p). En los cuadros de ahorro de costos de ahorro de tiempo, se presentan los costos unitarios de tiempos ahorrados que se tendrían en las alternativas ampliación por etapas o en conjunto, para diferentes tasa de crecimiento vehicular (3.5%, 7%, 10% y 15%) y para los diferentes tipos de vehículo.

Cuadro N° A.5.1
COSTO DEL TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 3.5%, TRAMO
1. SITUACIÓN SIN PROYECTO
(Km 21-42)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$ |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|-------------|
| 1995 | 91.04 | 78.07 | 75.35 | 0.23066 | 0.26900 | 0.27871 | 2.68486 | 2.56031 | 8.85729 | 7.03404 | 5.37378 | 17.29939 | 26.51029 |
| 1996 | 90.69 | 77.76 | 75.05 | 0.23156 | 0.27005 | 0.27980 | 2.69538 | 2.57034 | 8.89198 | 7.06160 | 5.39483 | 17.36715 | 26.61413 |
| 1997 | 90.32 | 77.45 | 74.75 | 0.23250 | 0.27115 | 0.28094 | 2.70636 | 2.58080 | 8.92818 | 7.09034 | 5.41680 | 17.43785 | 26.72248 |
| 1998 | 89.94 | 77.12 | 74.43 | 0.23349 | 0.27230 | 0.28213 | 2.71781 | 2.59172 | 8.96596 | 7.12034 | 5.43972 | 17.51164 | 26.83555 |
| 1999 | 89.55 | 76.78 | 74.11 | 0.23452 | 0.27350 | 0.28337 | 2.72976 | 2.60312 | 9.00540 | 7.15166 | 5.46364 | 17.58867 | 26.95359 |
| 2000 | 89.14 | 76.43 | 73.77 | 0.23559 | 0.27475 | 0.28467 | 2.74225 | 2.61503 | 9.04658 | 7.18437 | 5.48863 | 17.66910 | 27.07686 |
| 2001 | 88.72 | 76.07 | 73.42 | 0.23671 | 0.27605 | 0.28602 | 2.75529 | 2.62746 | 9.08961 | 7.21854 | 5.51473 | 17.75314 | 27.20563 |
| 2002 | 88.28 | 75.70 | 73.06 | 0.23788 | 0.27742 | 0.28744 | 2.76892 | 2.64046 | 9.13457 | 7.25425 | 5.54201 | 17.84096 | 27.34021 |
| 2003 | 87.83 | 75.31 | 72.69 | 0.23910 | 0.27885 | 0.28892 | 2.78317 | 2.65405 | 9.18158 | 7.29158 | 5.57053 | 17.93277 | 27.48091 |
| 2004 | 87.36 | 74.91 | 72.30 | 0.24038 | 0.28034 | 0.29046 | 2.79807 | 2.66826 | 9.23075 | 7.33063 | 5.60036 | 18.02880 | 27.62807 |
| 2005 | 86.88 | 74.49 | 71.90 | 0.24172 | 0.28190 | 0.29208 | 2.81366 | 2.68313 | 9.28219 | 7.37148 | 5.63158 | 18.12928 | 27.78204 |
| 2006 | 86.37 | 74.06 | 71.48 | 0.24313 | 0.28354 | 0.29378 | 2.82999 | 2.69870 | 9.33604 | 7.41425 | 5.66425 | 18.23446 | 27.94323 |
| 2007 | 85.88 | 73.64 | 71.07 | 0.24454 | 0.28518 | 0.29548 | 2.84640 | 2.71435 | 9.39017 | 7.45724 | 5.69709 | 18.34018 | 28.10524 |
| 2008 | 85.42 | 73.24 | 70.69 | 0.24585 | 0.28672 | 0.29707 | 2.86170 | 2.72894 | 9.44066 | 7.49733 | 5.72772 | 18.43880 | 28.25637 |
| 2009 | 84.94 | 72.84 | 70.30 | 0.24723 | 0.28832 | 0.29873 | 2.87772 | 2.74421 | 9.49350 | 7.53929 | 5.75978 | 18.54199 | 28.41450 |
| 2010 | 84.45 | 72.41 | 69.89 | 0.24867 | 0.29000 | 0.30047 | 2.89448 | 2.76020 | 9.54881 | 7.58322 | 5.79334 | 18.65002 | 28.58005 |

Fuente: Elaboración propia

Cuadro N° A.5.2
COSTO DEL TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 3.5%, TRAMO
2. SITUACIÓN SIN PROYECTO
(Km 42-88)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$ |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|-------------|
| 1995 | 90.25 | 77.39 | 74.69 | 0.50969 | 0.59441 | 0.61587 | 5.93277 | 5.65754 | 19.57203 | 15.54319 | 11.87450 | 38.22663 | 58.58004 |
| 1996 | 90.05 | 77.21 | 74.52 | 0.51085 | 0.59576 | 0.61727 | 5.94624 | 5.67038 | 19.61646 | 15.57847 | 11.90146 | 38.31340 | 58.71301 |
| 1997 | 89.84 | 77.03 | 74.35 | 0.51205 | 0.59716 | 0.61873 | 5.96024 | 5.68374 | 19.66266 | 15.61516 | 11.92948 | 38.40362 | 58.85128 |
| 1998 | 89.62 | 76.84 | 74.17 | 0.51330 | 0.59862 | 0.62024 | 5.97480 | 5.69762 | 19.71070 | 15.65331 | 11.95863 | 38.49745 | 58.99507 |
| 1999 | 89.39 | 76.65 | 73.98 | 0.51460 | 0.60014 | 0.62181 | 5.98995 | 5.71207 | 19.76067 | 15.69300 | 11.98895 | 38.59505 | 59.14463 |
| 2000 | 89.16 | 76.45 | 73.78 | 0.51595 | 0.60172 | 0.62345 | 6.00571 | 5.72710 | 19.81265 | 15.73428 | 12.02049 | 38.69659 | 59.30023 |
| 2001 | 88.91 | 76.24 | 73.58 | 0.51736 | 0.60336 | 0.62515 | 6.02211 | 5.74273 | 19.86675 | 15.77724 | 12.05331 | 38.80225 | 59.46214 |
| 2002 | 88.66 | 76.02 | 73.37 | 0.51883 | 0.60507 | 0.62692 | 6.03918 | 5.75901 | 19.92305 | 15.82196 | 12.08747 | 38.91221 | 59.63066 |
| 2003 | 88.40 | 75.80 | 73.16 | 0.52036 | 0.60685 | 0.62876 | 6.05694 | 5.77595 | 19.98166 | 15.86850 | 12.12303 | 39.02668 | 59.80608 |
| 2004 | 88.13 | 75.57 | 72.94 | 0.52194 | 0.60870 | 0.63068 | 6.07544 | 5.79359 | 20.04268 | 15.91696 | 12.16005 | 39.14587 | 59.98872 |
| 2005 | 87.85 | 75.33 | 72.71 | 0.52360 | 0.61063 | 0.63268 | 6.09470 | 5.81196 | 20.10624 | 15.96743 | 12.19861 | 39.27000 | 60.17894 |
| 2006 | 87.57 | 75.08 | 72.47 | 0.52532 | 0.61264 | 0.63477 | 6.11477 | 5.83110 | 20.17244 | 16.02001 | 12.23877 | 39.39930 | 60.37710 |
| 2007 | 87.27 | 74.83 | 72.22 | 0.52712 | 0.61474 | 0.63694 | 6.13568 | 5.85104 | 20.24142 | 16.07479 | 12.28063 | 39.53403 | 60.58356 |
| 2008 | 86.96 | 74.56 | 71.97 | 0.52899 | 0.61692 | 0.63920 | 6.15747 | 5.87182 | 20.31332 | 16.13189 | 12.32425 | 39.67445 | 60.79875 |
| 2009 | 86.64 | 74.29 | 71.70 | 0.53094 | 0.61920 | 0.64156 | 6.18019 | 5.89348 | 20.38827 | 16.19141 | 12.36972 | 39.82084 | 61.02308 |
| 2010 | 86.31 | 74.01 | 71.43 | 0.53298 | 0.62157 | 0.64402 | 6.20389 | 5.91608 | 20.46643 | 16.25348 | 12.41714 | 39.97349 | 61.25701 |

Fuente: Elaboración propia

Cuadro N° A.5.3
COSTO DEL TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 3.5%, TRAMO
3. SITUACIÓN SIN PROYECTO
(Km 88-103)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$ |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|-------------|
| 1995 | 89.41 | 76.66 | 73.99 | 0.16777 | 0.19566 | 0.20273 | 1.95289 | 1.86229 | 6.44253 | 5.11635 | 3.90873 | 12.58306 | 19.28279 |
| 1996 | 89.17 | 76.46 | 73.80 | 0.16821 | 0.19617 | 0.20326 | 1.95798 | 1.86715 | 6.45931 | 5.12968 | 3.91891 | 12.61585 | 19.33304 |
| 1997 | 88.93 | 76.26 | 73.60 | 0.16867 | 0.19670 | 0.20380 | 1.96327 | 1.87219 | 6.47678 | 5.14356 | 3.92951 | 12.64996 | 19.38532 |
| 1998 | 88.68 | 76.04 | 73.39 | 0.16914 | 0.19725 | 0.20438 | 1.96878 | 1.87745 | 6.49496 | 5.15799 | 3.94054 | 12.68546 | 19.43972 |
| 1999 | 88.43 | 75.82 | 73.18 | 0.16963 | 0.19783 | 0.20497 | 1.97452 | 1.88292 | 6.51388 | 5.17302 | 3.95202 | 12.72242 | 19.49636 |
| 2000 | 88.16 | 75.59 | 72.96 | 0.17015 | 0.19843 | 0.20559 | 1.98049 | 1.88861 | 6.53358 | 5.18866 | 3.96397 | 12.76090 | 19.55532 |
| 2001 | 87.88 | 75.36 | 72.73 | 0.17068 | 0.19905 | 0.20624 | 1.98671 | 1.89454 | 6.55410 | 5.20496 | 3.97642 | 12.80097 | 19.61673 |
| 2002 | 87.60 | 75.11 | 72.50 | 0.17124 | 0.19970 | 0.20691 | 1.99319 | 1.90072 | 6.57547 | 5.22193 | 3.98939 | 12.84271 | 19.68069 |
| 2003 | 87.30 | 74.86 | 72.25 | 0.17182 | 0.20038 | 0.20761 | 1.99994 | 1.90716 | 6.59773 | 5.23961 | 4.00289 | 12.88619 | 19.74733 |
| 2004 | 87.00 | 74.60 | 72.00 | 0.17242 | 0.20108 | 0.20834 | 2.00697 | 1.91386 | 6.62094 | 5.25804 | 4.01697 | 12.93151 | 19.81678 |
| 2005 | 86.68 | 74.33 | 71.74 | 0.17305 | 0.20181 | 0.20910 | 2.01430 | 1.92086 | 6.64512 | 5.27725 | 4.03165 | 12.97876 | 19.88918 |
| 2006 | 86.35 | 74.04 | 71.46 | 0.17371 | 0.20258 | 0.20990 | 2.02195 | 1.92815 | 6.67035 | 5.29728 | 4.04695 | 13.02802 | 19.96467 |
| 2007 | 86.02 | 73.76 | 71.18 | 0.17439 | 0.20337 | 0.21072 | 2.02988 | 1.93571 | 6.69651 | 5.31805 | 4.06282 | 13.07911 | 20.04296 |
| 2008 | 85.61 | 73.41 | 70.85 | 0.17521 | 0.20433 | 0.21171 | 2.03941 | 1.94480 | 6.72795 | 5.34302 | 4.08190 | 13.14052 | 20.13707 |
| 2009 | 85.20 | 73.05 | 70.51 | 0.17606 | 0.20533 | 0.21274 | 2.04937 | 1.95429 | 6.76080 | 5.36911 | 4.10183 | 13.20469 | 20.23541 |
| 2010 | 84.77 | 72.68 | 70.15 | 0.17696 | 0.20637 | 0.21382 | 2.05978 | 1.96422 | 6.79515 | 5.39639 | 4.12267 | 13.27177 | 20.33820 |

Fuente: Elaboración propia

Cuadro N° A.5.4
COSTO DEL TIEMPO POR VEHÍCULO, CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 3.5%,
TRAMO 4. SITUACIÓN SIN PROYECTO
(Km 103-112)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$ |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|-------------|
| 1995 | 84.76 | 72.68 | 70.14 | 0.10619 | 0.12384 | 0.12831 | 1.23602 | 1.17868 | 4.07760 | 3.23824 | 2.47391 | 7.96406 | 12.20445 |
| 1996 | 84.41 | 72.38 | 69.85 | 0.10663 | 0.12435 | 0.12884 | 1.24112 | 1.18354 | 4.09442 | 3.25160 | 2.48411 | 7.99691 | 12.25479 |
| 1997 | 84.05 | 72.07 | 69.56 | 0.10708 | 0.12488 | 0.12939 | 1.24644 | 1.18862 | 4.11197 | 3.26554 | 2.49477 | 8.03120 | 12.30734 |
| 1998 | 83.67 | 71.75 | 69.25 | 0.10756 | 0.12544 | 0.12997 | 1.25200 | 1.19392 | 4.13030 | 3.28009 | 2.50589 | 8.06700 | 12.36220 |
| 1999 | 83.29 | 71.42 | 68.93 | 0.10806 | 0.12602 | 0.13057 | 1.25780 | 1.19945 | 4.14945 | 3.29530 | 2.51750 | 8.10439 | 12.41950 |
| 2000 | 82.89 | 71.07 | 68.60 | 0.10858 | 0.12663 | 0.13120 | 1.26386 | 1.20523 | 4.16945 | 3.31118 | 2.52964 | 8.14346 | 12.47937 |
| 2001 | 82.48 | 70.72 | 68.26 | 0.10912 | 0.12726 | 0.13186 | 1.27020 | 1.21128 | 4.19036 | 3.32779 | 2.54232 | 8.18429 | 12.54194 |
| 2002 | 81.69 | 70.04 | 67.60 | 0.11018 | 0.12849 | 0.13313 | 1.28248 | 1.22298 | 4.23085 | 3.35995 | 2.56689 | 8.26339 | 12.66315 |
| 2003 | 81.20 | 69.63 | 67.20 | 0.11083 | 0.12926 | 0.13393 | 1.29011 | 1.23026 | 4.25605 | 3.37995 | 2.58218 | 8.31259 | 12.73855 |
| 2004 | 80.70 | 69.20 | 66.79 | 0.11152 | 0.13006 | 0.13476 | 1.29811 | 1.23789 | 4.28244 | 3.40091 | 2.59819 | 8.36413 | 12.81754 |
| 2005 | 80.18 | 68.76 | 66.36 | 0.11224 | 0.13090 | 0.13563 | 1.30650 | 1.24589 | 4.31010 | 3.42288 | 2.61497 | 8.41816 | 12.90033 |
| 2006 | 79.65 | 68.30 | 65.92 | 0.11300 | 0.13178 | 0.13654 | 1.31529 | 1.25427 | 4.33911 | 3.44592 | 2.63257 | 8.47482 | 12.98716 |
| 2007 | 79.09 | 67.82 | 65.46 | 0.11379 | 0.13270 | 0.13750 | 1.32452 | 1.26307 | 4.36955 | 3.47009 | 2.65104 | 8.53427 | 13.07826 |
| 2008 | 78.52 | 67.33 | 64.98 | 0.11462 | 0.13368 | 0.13850 | 1.33421 | 1.27231 | 4.40150 | 3.49547 | 2.67043 | 8.59669 | 13.17391 |
| 2009 | 77.92 | 66.82 | 64.49 | 0.11550 | 0.13469 | 0.13956 | 1.34438 | 1.28201 | 4.43507 | 3.52213 | 2.69079 | 8.66226 | 13.27439 |
| 2010 | 77.31 | 66.29 | 63.98 | 0.11642 | 0.13577 | 0.14067 | 1.35508 | 1.29221 | 4.47036 | 3.55015 | 2.71220 | 8.73118 | 13.38002 |

Fuente: Elaboración propia

Cuadro N° A.5.5
COSTO DEL TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 3.5%, TRAMO
5. SITUACIÓN SIN PROYECTO
(Km 112-115)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$ |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|-------------|
| 1995 | 92.23 | 79.08 | 76.32 | 0.03253 | 0.03794 | 0.03931 | 0.37864 | 0.36107 | 1.24912 | 0.99199 | 0.75785 | 2.43968 | 3.73866 |
| 1996 | 91.92 | 78.82 | 76.07 | 0.03264 | 0.03806 | 0.03944 | 0.37990 | 0.36228 | 1.25328 | 0.99530 | 0.76038 | 2.44782 | 3.75114 |
| 1997 | 91.60 | 78.55 | 75.81 | 0.03275 | 0.03819 | 0.03957 | 0.38122 | 0.36353 | 1.25763 | 0.99875 | 0.76301 | 2.45630 | 3.76414 |
| 1998 | 91.27 | 78.26 | 75.54 | 0.03287 | 0.03833 | 0.03972 | 0.38259 | 0.36484 | 1.26215 | 1.00234 | 0.76576 | 2.46514 | 3.77769 |
| 1999 | 90.93 | 77.97 | 75.25 | 0.03299 | 0.03848 | 0.03986 | 0.38402 | 0.36621 | 1.26687 | 1.00609 | 0.76862 | 2.47436 | 3.79182 |
| 2000 | 90.58 | 77.67 | 74.96 | 0.03312 | 0.03862 | 0.04002 | 0.38551 | 0.36763 | 1.27180 | 1.01000 | 0.77161 | 2.48398 | 3.80655 |
| 2001 | 90.22 | 77.36 | 74.66 | 0.03325 | 0.03878 | 0.04018 | 0.38707 | 0.36911 | 1.27693 | 1.01408 | 0.77472 | 2.49401 | 3.82192 |
| 2002 | 89.84 | 77.03 | 74.35 | 0.03339 | 0.03894 | 0.04035 | 0.38869 | 0.37066 | 1.28229 | 1.01834 | 0.77798 | 2.50447 | 3.83796 |
| 2003 | 89.45 | 76.70 | 74.03 | 0.03354 | 0.03911 | 0.04053 | 0.39039 | 0.37228 | 1.28788 | 1.02278 | 0.78137 | 2.51540 | 3.85470 |
| 2004 | 89.05 | 76.35 | 73.69 | 0.03369 | 0.03929 | 0.04071 | 0.39216 | 0.37397 | 1.29373 | 1.02742 | 0.78491 | 2.52681 | 3.87218 |
| 2005 | 88.63 | 76.00 | 73.35 | 0.03385 | 0.03948 | 0.04090 | 0.39401 | 0.37573 | 1.29983 | 1.03226 | 0.78862 | 2.53873 | 3.89045 |
| 2006 | 88.19 | 75.62 | 72.99 | 0.03402 | 0.03967 | 0.04110 | 0.39594 | 0.37757 | 1.30620 | 1.03733 | 0.79248 | 2.55118 | 3.90953 |
| 2007 | 87.75 | 75.24 | 72.62 | 0.03419 | 0.03987 | 0.04131 | 0.39796 | 0.37950 | 1.31287 | 1.04262 | 0.79653 | 2.56420 | 3.92948 |
| 2008 | 87.28 | 74.84 | 72.23 | 0.03437 | 0.04008 | 0.04153 | 0.40008 | 0.38152 | 1.31984 | 1.04816 | 0.80076 | 2.57781 | 3.95035 |
| 2009 | 86.80 | 74.43 | 71.84 | 0.03456 | 0.04031 | 0.04176 | 0.40229 | 0.38362 | 1.32713 | 1.05395 | 0.80518 | 2.59206 | 3.97218 |
| 2010 | 86.31 | 74.01 | 71.43 | 0.03476 | 0.04054 | 0.04200 | 0.40460 | 0.38583 | 1.33477 | 1.06001 | 0.80981 | 2.60697 | 3.99503 |

Fuente: Elaboración propia

Cuadro N° A.5.6
COSTO DEL TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 3.5%, TRAMO
1. SITUACIÓN CON PROYECTO
(Km 21-42)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 96.98 | 83.16 | 80.26 | 0.21653 | 0.25253 | 0.26165 | 2.52041 | 2.40348 | 8.31475 | 6.60348 | 5.04484 | 16.23974 | 24.88696 |
| 1996 | 96.96 | 83.14 | 80.24 | 0.21657 | 0.25258 | 0.26171 | 2.52093 | 2.40398 | 8.31646 | 6.60484 | 5.04588 | 16.24309 | 24.89209 |
| 1997 | 96.94 | 83.12 | 80.23 | 0.21662 | 0.25264 | 0.26176 | 2.52147 | 2.40449 | 8.31824 | 6.60625 | 5.04696 | 16.24655 | 24.89740 |
| 1998 | 96.92 | 83.10 | 80.21 | 0.21667 | 0.25269 | 0.26182 | 2.52202 | 2.40502 | 8.32007 | 6.60771 | 5.04808 | 16.25014 | 24.90290 |
| 1999 | 96.90 | 83.09 | 80.19 | 0.21672 | 0.25275 | 0.26188 | 2.52260 | 2.40557 | 8.32198 | 6.60922 | 5.04923 | 16.25386 | 24.90860 |
| 2000 | 96.88 | 83.07 | 80.17 | 0.21677 | 0.25281 | 0.26194 | 2.52320 | 2.40614 | 8.32395 | 6.61078 | 5.05043 | 16.25771 | 24.91450 |
| 2001 | 96.85 | 83.05 | 80.15 | 0.21682 | 0.25287 | 0.26201 | 2.52382 | 2.40673 | 8.32599 | 6.61241 | 5.05167 | 16.26170 | 24.92061 |
| 2002 | 96.83 | 83.02 | 80.13 | 0.21688 | 0.25294 | 0.26207 | 2.52446 | 2.40734 | 8.32810 | 6.61408 | 5.05295 | 16.26582 | 24.92693 |
| 2003 | 96.80 | 83.00 | 80.11 | 0.21693 | 0.25300 | 0.26214 | 2.52512 | 2.40797 | 8.33029 | 6.61582 | 5.05428 | 16.27010 | 24.93348 |
| 2004 | 96.78 | 82.98 | 80.09 | 0.21699 | 0.25307 | 0.26221 | 2.52581 | 2.40863 | 8.33256 | 6.61762 | 5.05565 | 16.27453 | 24.94027 |
| 2005 | 96.75 | 82.96 | 80.07 | 0.21705 | 0.25314 | 0.26229 | 2.52652 | 2.40931 | 8.33490 | 6.61949 | 5.05707 | 16.27911 | 24.94729 |
| 2006 | 96.72 | 82.93 | 80.04 | 0.21712 | 0.25322 | 0.26236 | 2.52725 | 2.41001 | 8.33733 | 6.62142 | 5.05855 | 16.28386 | 24.95456 |
| 2007 | 96.69 | 82.91 | 80.02 | 0.21718 | 0.25330 | 0.26244 | 2.52802 | 2.41074 | 8.33985 | 6.62341 | 5.06008 | 16.28877 | 24.96210 |
| 2008 | 96.66 | 82.88 | 79.99 | 0.21725 | 0.25337 | 0.26252 | 2.52881 | 2.41149 | 8.34246 | 6.62548 | 5.06166 | 16.29386 | 24.96990 |
| 2009 | 96.63 | 82.85 | 79.97 | 0.21732 | 0.25346 | 0.26261 | 2.52963 | 2.41227 | 8.34516 | 6.62763 | 5.06330 | 16.29913 | 24.97798 |
| 2010 | 96.60 | 82.83 | 79.94 | 0.21739 | 0.25354 | 0.26270 | 2.53047 | 2.41308 | 8.34795 | 6.62985 | 5.06499 | 16.30460 | 24.98635 |

Fuente: Elaboración propia

Cuadro N° A.5.7
COSTO DEL TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 3.5%, TRAMO
2. SITUACIÓN CON PROYECTO
(Km 42-88)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 97.11 | 83.26 | 80.36 | 0.47370 | 0.55248 | 0.57243 | 5.51384 | 5.25804 | 18.18998 | 14.44688 | 11.03696 | 35.52731 | 54.44570 |
| 1996 | 97.09 | 83.25 | 80.35 | 0.47377 | 0.55257 | 0.57253 | 5.51473 | 5.25889 | 18.19292 | 14.44921 | 11.03873 | 35.53304 | 54.45448 |
| 1997 | 97.08 | 83.23 | 80.33 | 0.47385 | 0.55266 | 0.57262 | 5.51565 | 5.25977 | 18.19595 | 14.45162 | 11.04058 | 35.53897 | 54.46357 |
| 1998 | 97.06 | 83.22 | 80.32 | 0.47393 | 0.55276 | 0.57272 | 5.51660 | 5.26068 | 18.19910 | 14.45412 | 11.04248 | 35.54511 | 54.47297 |
| 1999 | 97.04 | 83.20 | 80.30 | 0.47402 | 0.55286 | 0.57282 | 5.51759 | 5.26162 | 18.20235 | 14.45670 | 11.04446 | 35.55147 | 54.48271 |
| 2000 | 97.02 | 83.19 | 80.29 | 0.47411 | 0.55296 | 0.57293 | 5.51861 | 5.26259 | 18.20572 | 14.45938 | 11.04650 | 35.55805 | 54.49280 |
| 2001 | 97.01 | 83.17 | 80.27 | 0.47420 | 0.55307 | 0.57304 | 5.51967 | 5.26360 | 18.20921 | 14.46215 | 11.04862 | 35.56486 | 54.50324 |
| 2002 | 96.99 | 83.16 | 80.26 | 0.47429 | 0.55318 | 0.57315 | 5.52076 | 5.26464 | 18.21282 | 14.46502 | 11.05081 | 35.57191 | 54.51405 |
| 2003 | 96.97 | 83.14 | 80.24 | 0.47439 | 0.55329 | 0.57327 | 5.52189 | 5.26572 | 18.21656 | 14.46799 | 11.05308 | 35.57922 | 54.52525 |
| 2004 | 96.95 | 83.12 | 80.22 | 0.47449 | 0.55341 | 0.57339 | 5.52307 | 5.26684 | 18.22043 | 14.47106 | 11.05543 | 35.58678 | 54.53684 |
| 2005 | 96.92 | 83.10 | 80.21 | 0.47459 | 0.55353 | 0.57352 | 5.52428 | 5.26800 | 18.22444 | 14.47425 | 11.05786 | 35.59462 | 54.54884 |
| 2006 | 96.90 | 83.08 | 80.19 | 0.47470 | 0.55366 | 0.57365 | 5.52554 | 5.26920 | 18.22860 | 14.47755 | 11.06038 | 35.60272 | 54.56127 |
| 2007 | 96.88 | 83.06 | 80.17 | 0.47481 | 0.55379 | 0.57378 | 5.52685 | 5.27045 | 18.23289 | 14.48096 | 11.06299 | 35.61112 | 54.57414 |
| 2008 | 96.86 | 83.04 | 80.15 | 0.47493 | 0.55392 | 0.57392 | 5.52820 | 5.27173 | 18.23735 | 14.48450 | 11.06569 | 35.61982 | 54.58746 |
| 2009 | 96.83 | 83.02 | 80.13 | 0.47505 | 0.55406 | 0.57407 | 5.52959 | 5.27307 | 18.24196 | 14.48816 | 11.06849 | 35.62882 | 54.60126 |
| 2010 | 96.81 | 83.00 | 80.11 | 0.47518 | 0.55421 | 0.57422 | 5.53104 | 5.27445 | 18.24673 | 14.49195 | 11.07139 | 35.63815 | 54.61555 |

Fuente: Elaboración propia

Cuadro N° A.5.8

**COSTO DEL TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 3.5%, TRAMO
3. SITUACIÓN CON PROYECTO
(Km 88-103)**

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Chofere | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|--------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 97.02 | 83.19 | 80.29 | 0.15461 | 0.18031 | 0.18682 | 1.79967 | 1.71618 | 5.93705 | 4.71482 | 3.60197 | 11.59581 | 17.76970 |
| 1996 | 97.00 | 83.18 | 80.28 | 0.15464 | 0.18034 | 0.18685 | 1.80002 | 1.71651 | 5.93820 | 4.71574 | 3.60267 | 11.59806 | 17.77315 |
| 1997 | 96.98 | 83.16 | 80.26 | 0.15467 | 0.18038 | 0.18689 | 1.80038 | 1.71686 | 5.93940 | 4.71669 | 3.60340 | 11.60039 | 17.77672 |
| 1998 | 96.96 | 83.14 | 80.24 | 0.15470 | 0.18041 | 0.18693 | 1.80075 | 1.71721 | 5.94063 | 4.71767 | 3.60415 | 11.60280 | 17.78041 |
| 1999 | 96.94 | 83.12 | 80.23 | 0.15474 | 0.18045 | 0.18697 | 1.80114 | 1.71758 | 5.94191 | 4.71868 | 3.60492 | 11.60529 | 17.78424 |
| 2000 | 96.92 | 83.11 | 80.21 | 0.15477 | 0.18049 | 0.18701 | 1.80154 | 1.71797 | 5.94324 | 4.71973 | 3.60573 | 11.60788 | 17.78820 |
| 2001 | 96.89 | 83.09 | 80.19 | 0.15481 | 0.18054 | 0.18705 | 1.80196 | 1.71836 | 5.94461 | 4.72082 | 3.60656 | 11.61056 | 17.79231 |
| 2002 | 96.87 | 83.07 | 80.17 | 0.15484 | 0.18058 | 0.18710 | 1.80239 | 1.71877 | 5.94603 | 4.72195 | 3.60742 | 11.61333 | 17.79656 |
| 2003 | 96.85 | 83.05 | 80.15 | 0.15488 | 0.18062 | 0.18715 | 1.80283 | 1.71920 | 5.94750 | 4.72312 | 3.60831 | 11.61620 | 17.80096 |
| 2004 | 96.82 | 83.02 | 80.13 | 0.15492 | 0.18067 | 0.18719 | 1.80330 | 1.71964 | 5.94902 | 4.72433 | 3.60923 | 11.61918 | 17.80551 |
| 2005 | 96.80 | 83.00 | 80.11 | 0.15496 | 0.18072 | 0.18724 | 1.80377 | 1.72009 | 5.95059 | 4.72558 | 3.61019 | 11.62226 | 17.81023 |
| 2006 | 96.77 | 82.98 | 80.09 | 0.15501 | 0.18077 | 0.18729 | 1.80427 | 1.72057 | 5.95223 | 4.72687 | 3.61118 | 11.62544 | 17.81512 |
| 2007 | 96.74 | 82.96 | 80.06 | 0.15505 | 0.18082 | 0.18735 | 1.80478 | 1.72105 | 5.95392 | 4.72822 | 3.61221 | 11.62875 | 17.82018 |
| 2008 | 96.71 | 82.93 | 80.04 | 0.15510 | 0.18087 | 0.18740 | 1.80531 | 1.72156 | 5.95567 | 4.72961 | 3.61327 | 11.63216 | 17.82542 |
| 2009 | 96.69 | 82.91 | 80.02 | 0.15514 | 0.18093 | 0.18746 | 1.80586 | 1.72208 | 5.95748 | 4.73105 | 3.61437 | 11.63571 | 17.83084 |
| 2010 | 96.65 | 82.88 | 79.99 | 0.15519 | 0.18098 | 0.18752 | 1.80643 | 1.72263 | 5.95936 | 4.73254 | 3.61551 | 11.63937 | 17.83646 |

Fuente: Elaboración propia

Cuadro N° A.5.9
**COSTO DEL TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 3.5%, TRAMO
4. SITUACIÓN CON PROYECTO
(Km 103-112)**

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Chofere | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|--------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 96.70 | 82.92 | 80.03 | 0.09308 | 0.10854 | 0.11246 | 1.08340 | 1.03314 | 3.57409 | 2.83826 | 2.16834 | 6.98065 | 10.69722 |
| 1996 | 96.67 | 82.89 | 80.00 | 0.09310 | 0.10858 | 0.11250 | 1.08373 | 1.03346 | 3.57520 | 2.83914 | 2.16901 | 6.98282 | 10.70055 |
| 1997 | 96.63 | 82.86 | 79.98 | 0.09313 | 0.10861 | 0.11253 | 1.08408 | 1.03379 | 3.57636 | 2.84005 | 2.16971 | 6.98507 | 10.70399 |
| 1998 | 96.60 | 82.84 | 79.95 | 0.09317 | 0.10865 | 0.11257 | 1.08444 | 1.03414 | 3.57755 | 2.84100 | 2.17043 | 6.98740 | 10.70757 |
| 1999 | 96.57 | 82.81 | 79.92 | 0.09320 | 0.10868 | 0.11261 | 1.08482 | 1.03449 | 3.57878 | 2.84198 | 2.17118 | 6.98981 | 10.71126 |
| 2000 | 96.53 | 82.78 | 79.89 | 0.09323 | 0.10872 | 0.11265 | 1.08521 | 1.03486 | 3.58006 | 2.84300 | 2.17196 | 6.99231 | 10.71510 |
| 2001 | 96.50 | 82.75 | 79.86 | 0.09327 | 0.10876 | 0.11269 | 1.08561 | 1.03525 | 3.58139 | 2.84405 | 2.17277 | 6.99490 | 10.71906 |
| 2002 | 96.46 | 82.72 | 79.83 | 0.09330 | 0.10881 | 0.11273 | 1.08603 | 1.03564 | 3.58276 | 2.84514 | 2.17360 | 6.99759 | 10.72317 |
| 2003 | 96.42 | 82.68 | 79.80 | 0.09334 | 0.10885 | 0.11278 | 1.08646 | 1.03605 | 3.58419 | 2.84627 | 2.17446 | 7.00036 | 10.72743 |
| 2004 | 96.38 | 82.65 | 79.77 | 0.09338 | 0.10889 | 0.11283 | 1.08690 | 1.03648 | 3.58566 | 2.84744 | 2.17535 | 7.00324 | 10.73184 |
| 2005 | 96.34 | 82.61 | 79.74 | 0.09342 | 0.10894 | 0.11287 | 1.08737 | 1.03692 | 3.58719 | 2.84865 | 2.17628 | 7.00622 | 10.73641 |
| 2006 | 96.30 | 82.58 | 79.70 | 0.09346 | 0.10899 | 0.11292 | 1.08784 | 1.03738 | 3.58877 | 2.84991 | 2.17724 | 7.00931 | 10.74114 |
| 2007 | 96.26 | 82.54 | 79.66 | 0.09350 | 0.10904 | 0.11297 | 1.08834 | 1.03785 | 3.59040 | 2.85121 | 2.17823 | 7.01251 | 10.74604 |
| 2008 | 96.21 | 82.50 | 79.63 | 0.09354 | 0.10909 | 0.11303 | 1.08886 | 1.03834 | 3.59210 | 2.85256 | 2.17926 | 7.01582 | 10.75112 |
| 2009 | 96.16 | 82.46 | 79.59 | 0.09359 | 0.10914 | 0.11308 | 1.08939 | 1.03885 | 3.59386 | 2.85395 | 2.18033 | 7.01926 | 10.75638 |
| 2010 | 96.12 | 82.42 | 79.55 | 0.09364 | 0.10920 | 0.11314 | 1.08994 | 1.03938 | 3.59568 | 2.85540 | 2.18143 | 7.02281 | 10.76183 |

Fuente: Elaboración propia

Cuadro N° A.5.10
COSTO DEL TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 3.5%, TRAMO
5. SITUACIÓN CON PROYECTO
(Km 112-115)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Chofere | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|--------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 97.03 | 83.17 | 80.28 | 0.03092 | 0.03607 | 0.03737 | 0.35987 | 0.34318 | 1.18721 | 0.94316 | 0.72054 | 2.31877 | 3.55396 |
| 1996 | 97.02 | 83.16 | 80.26 | 0.03092 | 0.03608 | 0.03738 | 0.35994 | 0.34324 | 1.18743 | 0.94334 | 0.72068 | 2.31920 | 3.55463 |
| 1997 | 97.00 | 83.14 | 80.25 | 0.03093 | 0.03608 | 0.03739 | 0.36001 | 0.34331 | 1.18766 | 0.94352 | 0.72082 | 2.31966 | 3.55532 |
| 1998 | 96.98 | 83.13 | 80.23 | 0.03093 | 0.03609 | 0.03739 | 0.36008 | 0.34338 | 1.18790 | 0.94371 | 0.72096 | 2.32012 | 3.55604 |
| 1999 | 96.96 | 83.11 | 80.21 | 0.03094 | 0.03610 | 0.03740 | 0.36016 | 0.34345 | 1.18815 | 0.94391 | 0.72111 | 2.32061 | 3.55678 |
| 2000 | 96.94 | 83.09 | 80.19 | 0.03095 | 0.03611 | 0.03741 | 0.36024 | 0.34352 | 1.18841 | 0.94411 | 0.72127 | 2.32111 | 3.55755 |
| 2001 | 96.91 | 83.07 | 80.18 | 0.03096 | 0.03611 | 0.03742 | 0.36032 | 0.34360 | 1.18867 | 0.94432 | 0.72143 | 2.32163 | 3.55834 |
| 2002 | 96.89 | 83.05 | 80.16 | 0.03096 | 0.03612 | 0.03743 | 0.36040 | 0.34368 | 1.18895 | 0.94454 | 0.72160 | 2.32216 | 3.55917 |
| 2003 | 96.87 | 83.03 | 80.14 | 0.03097 | 0.03613 | 0.03743 | 0.36049 | 0.34376 | 1.18923 | 0.94477 | 0.72177 | 2.32272 | 3.56002 |
| 2004 | 96.85 | 83.01 | 80.12 | 0.03098 | 0.03614 | 0.03744 | 0.36058 | 0.34385 | 1.18953 | 0.94500 | 0.72195 | 2.32330 | 3.56090 |
| 2005 | 96.82 | 82.99 | 80.10 | 0.03099 | 0.03615 | 0.03745 | 0.36067 | 0.34394 | 1.18983 | 0.94524 | 0.72214 | 2.32389 | 3.56182 |
| 2006 | 96.79 | 82.97 | 80.08 | 0.03099 | 0.03616 | 0.03746 | 0.36076 | 0.34403 | 1.19015 | 0.94550 | 0.72233 | 2.32451 | 3.56277 |
| 2007 | 96.77 | 82.95 | 80.06 | 0.03100 | 0.03617 | 0.03747 | 0.36086 | 0.34412 | 1.19048 | 0.94576 | 0.72253 | 2.32515 | 3.56375 |
| 2008 | 96.74 | 82.92 | 80.03 | 0.03101 | 0.03618 | 0.03748 | 0.36097 | 0.34422 | 1.19082 | 0.94603 | 0.72273 | 2.32581 | 3.56476 |
| 2009 | 96.71 | 82.90 | 80.01 | 0.03102 | 0.03619 | 0.03750 | 0.36107 | 0.34432 | 1.19117 | 0.94630 | 0.72295 | 2.32650 | 3.56581 |
| 2010 | 96.68 | 82.87 | 79.98 | 0.03103 | 0.03620 | 0.03751 | 0.36118 | 0.34443 | 1.19153 | 0.94659 | 0.72317 | 2.32721 | 3.56690 |

Fuente: Elaboración propia

Cuadro N° A.5.11
PROYECTO AMPLIACIÓN A UN 3^{ER} CARRIL VS SITUACIÓN OPTIMIZADA
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 3.5%. TRAMO 1

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 2.685 | 2.520 | 0.164 | 2.560 | 2.403 | 0.157 | 7.034 | 6.603 | 0.431 | 5.374 | 5.045 | 0.329 | 8.857 | 8.315 | 0.543 | 17.299 | 16.240 | 1.060 |
| 1996 | 2.695 | 2.521 | 0.174 | 2.570 | 2.404 | 0.166 | 7.062 | 6.605 | 0.457 | 5.395 | 5.046 | 0.349 | 8.892 | 8.316 | 0.576 | 17.367 | 16.243 | 1.124 |
| 1997 | 2.706 | 2.521 | 0.185 | 2.581 | 2.404 | 0.176 | 7.090 | 6.606 | 0.484 | 5.417 | 5.047 | 0.370 | 8.928 | 8.318 | 0.610 | 17.438 | 16.247 | 1.191 |
| 1998 | 2.718 | 2.522 | 0.196 | 2.592 | 2.405 | 0.187 | 7.120 | 6.608 | 0.513 | 5.440 | 5.048 | 0.392 | 8.966 | 8.320 | 0.646 | 17.512 | 16.250 | 1.261 |
| 1999 | 2.730 | 2.523 | 0.207 | 2.603 | 2.406 | 0.198 | 7.152 | 6.609 | 0.542 | 5.464 | 5.049 | 0.414 | 9.005 | 8.322 | 0.683 | 17.589 | 16.254 | 1.335 |
| 2000 | 2.742 | 2.523 | 0.219 | 2.615 | 2.406 | 0.209 | 7.184 | 6.611 | 0.574 | 5.489 | 5.050 | 0.438 | 9.047 | 8.324 | 0.723 | 17.669 | 16.258 | 1.411 |
| 2001 | 2.755 | 2.524 | 0.231 | 2.627 | 2.407 | 0.221 | 7.219 | 6.612 | 0.606 | 5.515 | 5.052 | 0.463 | 9.090 | 8.326 | 0.764 | 17.753 | 16.262 | 1.491 |
| 2002 | 2.769 | 2.524 | 0.244 | 2.640 | 2.407 | 0.233 | 7.254 | 6.614 | 0.640 | 5.542 | 5.053 | 0.489 | 9.135 | 8.328 | 0.806 | 17.841 | 16.266 | 1.575 |
| 2003 | 2.783 | 2.525 | 0.258 | 2.654 | 2.408 | 0.246 | 7.292 | 6.616 | 0.676 | 5.571 | 5.054 | 0.516 | 9.182 | 8.330 | 0.851 | 17.933 | 16.270 | 1.663 |
| 2004 | 2.798 | 2.526 | 0.272 | 2.668 | 2.409 | 0.260 | 7.331 | 6.618 | 0.713 | 5.600 | 5.056 | 0.545 | 9.231 | 8.333 | 0.896 | 18.029 | 16.275 | 1.754 |
| 2005 | 2.814 | 2.527 | 0.287 | 2.683 | 2.409 | 0.274 | 7.371 | 6.619 | 0.752 | 5.632 | 5.057 | 0.575 | 9.282 | 8.335 | 0.947 | 18.129 | 16.279 | 1.850 |
| 2006 | 2.830 | 2.527 | 0.303 | 2.699 | 2.410 | 0.289 | 7.414 | 6.621 | 0.793 | 5.664 | 5.059 | 0.606 | 9.336 | 8.337 | 0.999 | 18.234 | 16.284 | 1.951 |
| 2007 | 2.846 | 2.528 | 0.318 | 2.714 | 2.411 | 0.304 | 7.457 | 6.623 | 0.834 | 5.697 | 5.060 | 0.637 | 9.390 | 8.340 | 1.050 | 18.340 | 16.289 | 2.051 |
| 2008 | 2.862 | 2.529 | 0.333 | 2.729 | 2.411 | 0.317 | 7.497 | 6.625 | 0.872 | 5.728 | 5.062 | 0.666 | 9.441 | 8.342 | 1.098 | 18.439 | 16.294 | 2.145 |
| 2009 | 2.878 | 2.530 | 0.348 | 2.744 | 2.412 | 0.332 | 7.539 | 6.628 | 0.912 | 5.760 | 5.063 | 0.696 | 9.493 | 8.345 | 1.148 | 18.542 | 16.299 | 2.243 |
| 2010 | 2.894 | 2.530 | 0.364 | 2.760 | 2.413 | 0.347 | 7.583 | 6.630 | 0.953 | 5.793 | 5.065 | 0.728 | 9.549 | 8.348 | 1.201 | 18.650 | 16.305 | 2.345 |

Fuente: Elaboración propia a partir de los cuadros N° A.5.1 y A. 5.6

Cuadro N° A.5.12
PROYECTO AMPLIACIÓN A UN 3^{ER} CARRIL VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 3.5%. TRAMO 2

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 5.9328 | 5.5138 | 0.4189 | 5.6575 | 5.2580 | 0.3995 | 15.5432 | 14.4469 | 1.0963 | 11.8745 | 11.0370 | 0.8375 | 19.5720 | 18.1900 | 1.3820 | 38.2266 | 35.5273 | 2.6993 |
| 1996 | 5.9462 | 5.5147 | 0.4315 | 5.6704 | 5.2598 | 0.4115 | 15.5785 | 14.4492 | 1.1293 | 11.9015 | 11.0387 | 0.8627 | 19.6165 | 18.1929 | 1.4235 | 38.3134 | 35.5330 | 2.7804 |
| 1997 | 5.9602 | 5.5156 | 0.4446 | 5.6837 | 5.2598 | 0.4240 | 15.6152 | 14.4516 | 1.1635 | 11.9295 | 11.0406 | 0.8889 | 19.6627 | 18.1960 | 1.4667 | 38.4036 | 35.5390 | 2.8647 |
| 1998 | 5.9748 | 5.5166 | 0.4582 | 5.6976 | 5.2607 | 0.4369 | 15.6533 | 14.4541 | 1.1992 | 11.9586 | 11.0425 | 0.9161 | 19.7107 | 18.1991 | 1.5116 | 38.4975 | 35.5451 | 2.9523 |
| 1999 | 5.9900 | 5.5176 | 0.4724 | 5.7121 | 5.2616 | 0.4505 | 15.6930 | 14.4567 | 1.2363 | 11.9889 | 11.0445 | 0.9445 | 19.7607 | 18.2024 | 1.5583 | 38.5951 | 35.5515 | 3.0436 |
| 2000 | 6.0057 | 5.5186 | 0.4871 | 5.7271 | 5.2626 | 0.4645 | 15.7343 | 14.4594 | 1.2749 | 12.0205 | 11.0465 | 0.9740 | 19.8127 | 18.2057 | 1.6069 | 38.6966 | 35.5580 | 3.1385 |
| 2001 | 6.0221 | 5.5197 | 0.5024 | 5.7427 | 5.2636 | 0.4791 | 15.7772 | 14.4621 | 1.3151 | 12.0533 | 11.0486 | 1.0047 | 19.8668 | 18.2092 | 1.6575 | 38.8022 | 35.5649 | 3.2374 |
| 2002 | 6.0392 | 5.5208 | 0.5184 | 5.7590 | 5.2646 | 0.4944 | 15.8220 | 14.4650 | 1.3569 | 12.0875 | 11.0508 | 1.0367 | 19.9231 | 18.2128 | 1.7102 | 38.9122 | 35.5719 | 3.3403 |
| 2003 | 6.0569 | 5.5219 | 0.5350 | 5.7759 | 5.2657 | 0.5102 | 15.8685 | 14.4680 | 1.4005 | 12.1230 | 11.0531 | 1.0699 | 19.9817 | 18.2166 | 1.7651 | 39.0267 | 35.5792 | 3.4475 |
| 2004 | 6.0754 | 5.5231 | 0.5524 | 5.7936 | 5.2668 | 0.5267 | 15.9170 | 14.4711 | 1.4459 | 12.1600 | 11.0554 | 1.1046 | 20.0427 | 18.2204 | 1.8223 | 39.1459 | 35.5868 | 3.5591 |
| 2005 | 6.0947 | 5.5243 | 0.5704 | 5.8120 | 5.2680 | 0.5440 | 15.9674 | 14.4742 | 1.4932 | 12.1986 | 11.0579 | 1.1407 | 20.1062 | 18.2244 | 1.8818 | 39.2700 | 35.5946 | 3.6754 |
| 2006 | 6.1148 | 5.5255 | 0.5892 | 5.8311 | 5.2692 | 0.5619 | 16.0200 | 14.4775 | 1.5425 | 12.2388 | 11.0604 | 1.1784 | 20.1724 | 18.2286 | 1.9438 | 39.3993 | 35.6027 | 3.7966 |
| 2007 | 6.1357 | 5.5268 | 0.6088 | 5.8510 | 5.2704 | 0.5806 | 16.0748 | 14.4810 | 1.5938 | 12.2806 | 11.0630 | 1.2176 | 20.2414 | 18.2329 | 2.0085 | 39.5340 | 35.6111 | 3.9229 |
| 2008 | 6.1575 | 5.5282 | 0.6293 | 5.8718 | 5.2717 | 0.6001 | 16.1319 | 14.4845 | 1.6474 | 12.3242 | 11.0657 | 1.2586 | 20.3133 | 18.2373 | 2.0760 | 39.6745 | 35.6198 | 4.0546 |
| 2009 | 6.1802 | 5.5296 | 0.6506 | 5.8935 | 5.2731 | 0.6204 | 16.1914 | 14.4882 | 1.7033 | 12.3697 | 11.0685 | 1.3012 | 20.3883 | 18.2420 | 2.1463 | 39.8208 | 35.6288 | 4.1920 |
| 2010 | 6.2039 | 5.5310 | 0.6728 | 5.9161 | 5.2744 | 0.6416 | 16.2535 | 14.4920 | 1.7615 | 12.4171 | 11.0714 | 1.3458 | 20.4664 | 18.2467 | 2.2197 | 39.9735 | 35.6381 | 4.3353 |

Fuente: Elaboración propia a partir de los cuadros N° A.5.2 y A. 5.7

Cuadro N° A.5.13
PROYECTO AMPLIACIÓN A UN 3^{ER} CARRIL VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 3.5%. TRAMO 3

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.95289 | 1.79967 | 0.15322 | 1.86229 | 1.71618 | 0.14611 | 5.11635 | 4.71482 | 0.40153 | 3.90873 | 3.60197 | 0.30676 | 6.44253 | 5.93705 | 0.50547 | 12.5831 | 11.5958 | 0.9873 |
| 1996 | 1.95289 | 1.79967 | 0.15322 | 1.86229 | 1.71618 | 0.14611 | 5.11635 | 4.71482 | 0.40153 | 3.90873 | 3.60197 | 0.30676 | 6.45931 | 5.93820 | 0.50547 | 12.6158 | 11.5981 | 1.0178 |
| 1997 | 1.95798 | 1.80002 | 0.15796 | 1.86715 | 1.71651 | 0.15063 | 5.12968 | 4.71574 | 0.41395 | 3.91891 | 3.60267 | 0.31624 | 6.47678 | 5.93940 | 0.52111 | 12.6500 | 11.6004 | 1.0496 |
| 1998 | 1.96327 | 1.80038 | 0.16289 | 1.87219 | 1.71686 | 0.15534 | 5.14356 | 4.71669 | 0.42687 | 3.92951 | 3.60340 | 0.32611 | 6.49496 | 5.94063 | 0.53738 | 12.6855 | 11.6028 | 1.0827 |
| 1999 | 1.96878 | 1.80075 | 0.16803 | 1.87745 | 1.71721 | 0.16023 | 5.15799 | 4.71767 | 0.44032 | 3.94054 | 3.60415 | 0.33639 | 6.51388 | 5.94191 | 0.55433 | 12.7224 | 11.6053 | 1.1171 |
| 2000 | 1.97452 | 1.80114 | 0.17338 | 1.88292 | 1.71758 | 0.16533 | 5.17302 | 4.71868 | 0.45434 | 3.95202 | 3.60492 | 0.34710 | 6.53358 | 5.94324 | 0.57197 | 12.7609 | 11.6079 | 1.1530 |
| 2001 | 1.98049 | 1.80154 | 0.17895 | 1.88861 | 1.71797 | 0.17065 | 5.18866 | 4.71973 | 0.46893 | 3.96397 | 3.60573 | 0.35825 | 6.55410 | 5.94461 | 0.59035 | 12.8010 | 11.6106 | 1.1904 |
| 2002 | 1.98671 | 1.80196 | 0.18475 | 1.89454 | 1.71836 | 0.17618 | 5.20496 | 4.72082 | 0.48413 | 3.97642 | 3.60656 | 0.36986 | 6.57547 | 5.94603 | 0.60949 | 12.8427 | 11.6133 | 1.2294 |
| 2003 | 1.99319 | 1.80239 | 0.19080 | 1.90072 | 1.71877 | 0.18195 | 5.22193 | 4.72195 | 0.49998 | 3.98939 | 3.60742 | 0.38197 | 6.59773 | 5.94750 | 0.62944 | 12.8862 | 11.6162 | 1.2700 |
| 2004 | 1.99994 | 1.80283 | 0.19710 | 1.90716 | 1.71920 | 0.18796 | 5.23961 | 4.72312 | 0.51649 | 4.00289 | 3.60831 | 0.39458 | 6.62094 | 5.94902 | 0.65024 | 12.9315 | 11.6192 | 1.3123 |
| 2005 | 2.00697 | 1.80330 | 0.20367 | 1.91386 | 1.71964 | 0.19423 | 5.25804 | 4.72433 | 0.53371 | 4.01697 | 3.60923 | 0.40774 | 6.64512 | 5.95059 | 0.67192 | 12.9788 | 11.6223 | 1.3565 |
| 2006 | 2.01430 | 1.80377 | 0.21053 | 1.92086 | 1.72009 | 0.20076 | 5.27725 | 4.72558 | 0.55167 | 4.03165 | 3.61019 | 0.42146 | 6.67035 | 5.95223 | 0.69453 | 13.0280 | 11.6254 | 1.4026 |
| 2007 | 2.02195 | 1.80427 | 0.21768 | 1.92815 | 1.72057 | 0.20758 | 5.29728 | 4.72687 | 0.57040 | 4.04695 | 3.61118 | 0.43577 | 6.69651 | 5.95392 | 0.71812 | 13.0791 | 11.6287 | 1.4504 |
| 2008 | 2.02988 | 1.80478 | 0.22510 | 1.93571 | 1.72105 | 0.21465 | 5.31805 | 4.72822 | 0.58983 | 4.06282 | 3.61221 | 0.45061 | 6.72795 | 5.95567 | 0.74259 | 13.1405 | 11.6322 | 1.5084 |
| 2009 | 2.03941 | 1.80531 | 0.23410 | 1.94480 | 1.72156 | 0.22324 | 5.34302 | 4.72961 | 0.61341 | 4.08190 | 3.61327 | 0.46863 | 6.76080 | 5.95748 | 0.77228 | 13.2047 | 11.6357 | 1.5690 |
| 2010 | 2.04937 | 1.80586 | 0.24351 | 1.95429 | 1.72208 | 0.23221 | 5.36911 | 4.73105 | 0.63806 | 4.10183 | 3.61437 | 0.48746 | 6.79515 | 5.95936 | 0.80332 | 13.2718 | 11.6394 | 1.6324 |

Fuente: Elaboración propia a partir de los cuadros N° A.5.3 y A. 5.8

Cuadro N° A.5.14

PROYECTO AMPLIACIÓN A UN 3^{ER} CARRIL VS SITUACIÓN OPTIMIZADA.

AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 3.5%.. TRAMO 4

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.23602 | 1.08340 | 0.15263 | 1.17868 | 1.03314 | 0.14554 | 3.23824 | 2.83826 | 0.39998 | 2.47391 | 2.16834 | 0.30557 | 4.07760 | 3.57409 | 0.50351 | 7.9641 | 6.9806 | 0.9834 |
| 1996 | 1.24112 | 1.08373 | 0.15739 | 1.18354 | 1.03346 | 0.15009 | 3.25160 | 2.83914 | 0.41246 | 2.48411 | 2.16901 | 0.31510 | 4.09442 | 3.57520 | 0.51921 | 7.9969 | 6.9828 | 1.0141 |
| 1997 | 1.24644 | 1.08408 | 0.16236 | 1.18862 | 1.03379 | 0.15483 | 3.26554 | 2.84005 | 0.42548 | 2.49477 | 2.16971 | 0.32506 | 4.11197 | 3.57636 | 0.53562 | 8.0312 | 6.9851 | 1.0461 |
| 1998 | 1.25200 | 1.08444 | 0.16755 | 1.19392 | 1.03414 | 0.15978 | 3.28009 | 2.84100 | 0.43909 | 2.50589 | 2.17043 | 0.33545 | 4.13030 | 3.57755 | 0.55275 | 8.0670 | 6.9874 | 1.0796 |
| 1999 | 1.25780 | 1.08482 | 0.17298 | 1.19945 | 1.03449 | 0.16496 | 3.29530 | 2.84198 | 0.45331 | 2.51750 | 2.17118 | 0.34632 | 4.14945 | 3.57878 | 0.57066 | 8.1044 | 6.9898 | 1.1146 |
| 2000 | 1.26386 | 1.08521 | 0.17866 | 1.20523 | 1.03486 | 0.17037 | 3.31118 | 2.84300 | 0.46818 | 2.52964 | 2.17196 | 0.35768 | 4.16945 | 3.58006 | 0.58939 | 8.1435 | 6.9923 | 1.1511 |
| 2001 | 1.27020 | 1.08561 | 0.18459 | 1.21128 | 1.03525 | 0.17603 | 3.32779 | 2.84405 | 0.48373 | 2.54232 | 2.17277 | 0.36956 | 4.19036 | 3.58139 | 0.60897 | 8.1843 | 6.9949 | 1.1894 |
| 2002 | 1.28248 | 1.08603 | 0.19645 | 1.22298 | 1.03564 | 0.18734 | 3.35995 | 2.84514 | 0.51480 | 2.56689 | 2.17360 | 0.39329 | 4.23085 | 3.58276 | 0.64809 | 8.2634 | 6.9976 | 1.2658 |
| 2003 | 1.29011 | 1.08646 | 0.20366 | 1.23026 | 1.03605 | 0.19421 | 3.37995 | 2.84627 | 0.53368 | 2.58218 | 2.17446 | 0.40771 | 4.25605 | 3.58419 | 0.67186 | 8.3126 | 7.0004 | 1.3122 |
| 2004 | 1.29811 | 1.08690 | 0.21121 | 1.23789 | 1.03648 | 0.20141 | 3.40091 | 2.84744 | 0.55347 | 2.59819 | 2.17535 | 0.42283 | 4.28244 | 3.58566 | 0.69678 | 8.3641 | 7.0032 | 1.3609 |
| 2005 | 1.30650 | 1.08737 | 0.21913 | 1.24589 | 1.03692 | 0.20897 | 3.42288 | 2.84865 | 0.57422 | 2.61497 | 2.17628 | 0.43869 | 4.31010 | 3.58719 | 0.72291 | 8.4182 | 7.0062 | 1.4119 |
| 2006 | 1.31529 | 1.08784 | 0.22745 | 1.25427 | 1.03738 | 0.21690 | 3.44592 | 2.84991 | 0.59601 | 2.63257 | 2.17724 | 0.45533 | 4.33911 | 3.58877 | 0.75034 | 8.4748 | 7.0093 | 1.4655 |
| 2007 | 1.32452 | 1.08834 | 0.23618 | 1.26307 | 1.03785 | 0.22522 | 3.47009 | 2.85121 | 0.61888 | 2.65104 | 2.17823 | 0.47280 | 4.36955 | 3.59040 | 0.77914 | 8.5343 | 7.0125 | 1.5218 |
| 2008 | 1.33421 | 1.08886 | 0.24535 | 1.27231 | 1.03834 | 0.23397 | 3.49547 | 2.85256 | 0.64291 | 2.67043 | 2.17926 | 0.49116 | 4.40150 | 3.59210 | 0.80940 | 8.5967 | 7.0158 | 1.5809 |
| 2009 | 1.34438 | 1.08939 | 0.25499 | 1.28201 | 1.03885 | 0.24316 | 3.52213 | 2.85395 | 0.66818 | 2.69079 | 2.18033 | 0.51046 | 4.43507 | 3.59386 | 0.84122 | 8.6623 | 7.0193 | 1.6430 |
| 2010 | 1.35508 | 1.08994 | 0.26514 | 1.29221 | 1.03938 | 0.25284 | 3.55015 | 2.85540 | 0.69475 | 2.71220 | 2.18143 | 0.53077 | 4.47036 | 3.59568 | 0.87468 | 8.7312 | 7.0228 | 1.7084 |

Fuente: Elaboración propia a partir de los cuadros N° A.5.4 y A. 5.9

Cuadro N° A.5.15
PROYECTO AMPLIACIÓN A UN 3^{ER} CARRIL VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 3.5%.. TRAMO 5

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 0.37864 | 0.35987 | 0.01877 | 0.36107 | 0.34318 | 0.01789 | 0.99199 | 0.94316 | 0.04883 | 0.75785 | 0.72054 | 0.03730 | 1.24912 | 1.18721 | 0.06191 | 2.4397 | 2.3188 | 0.1209 |
| 1996 | 0.37990 | 0.35994 | 0.01996 | 0.36228 | 0.34324 | 0.01904 | 0.99530 | 0.94334 | 0.05196 | 0.76038 | 0.72068 | 0.03970 | 1.25328 | 1.18743 | 0.06585 | 2.4478 | 2.3192 | 0.1286 |
| 1997 | 0.38122 | 0.36001 | 0.02121 | 0.36353 | 0.34331 | 0.02022 | 0.99875 | 0.94352 | 0.05523 | 0.76301 | 0.72082 | 0.04219 | 1.25763 | 1.18766 | 0.06996 | 2.4563 | 2.3197 | 0.1366 |
| 1998 | 0.38259 | 0.36008 | 0.02251 | 0.36484 | 0.34338 | 0.02146 | 1.00234 | 0.94371 | 0.05863 | 0.76576 | 0.72096 | 0.04479 | 1.26215 | 1.18790 | 0.07425 | 2.4651 | 2.3201 | 0.1450 |
| 1999 | 0.38402 | 0.36016 | 0.02386 | 0.36621 | 0.34345 | 0.02276 | 1.00609 | 0.94391 | 0.06218 | 0.76862 | 0.72111 | 0.04751 | 1.26687 | 1.18815 | 0.07872 | 2.4744 | 2.3206 | 0.1538 |
| 2000 | 0.38551 | 0.36024 | 0.02528 | 0.36763 | 0.34352 | 0.02410 | 1.01000 | 0.94411 | 0.06589 | 0.77161 | 0.72127 | 0.05034 | 1.27180 | 1.18841 | 0.08339 | 2.4840 | 2.3211 | 0.1629 |
| 2001 | 0.38707 | 0.36032 | 0.02675 | 0.36911 | 0.34360 | 0.02551 | 1.01408 | 0.94432 | 0.06976 | 0.77472 | 0.72143 | 0.05329 | 1.27693 | 1.18867 | 0.08826 | 2.4940 | 2.3216 | 0.1724 |
| 2002 | 0.38869 | 0.36040 | 0.02829 | 0.37066 | 0.34368 | 0.02698 | 1.01834 | 0.94454 | 0.07379 | 0.77798 | 0.72160 | 0.05638 | 1.28229 | 1.18895 | 0.09334 | 2.5045 | 2.3222 | 0.1823 |
| 2003 | 0.39039 | 0.36049 | 0.02990 | 0.37228 | 0.34376 | 0.02852 | 1.02278 | 0.94477 | 0.07801 | 0.78137 | 0.72177 | 0.05960 | 1.28788 | 1.18923 | 0.09865 | 2.5154 | 2.3227 | 0.1927 |
| 2004 | 0.39216 | 0.36058 | 0.03158 | 0.37397 | 0.34385 | 0.03012 | 1.02742 | 0.94500 | 0.08241 | 0.78491 | 0.72195 | 0.06296 | 1.29373 | 1.18953 | 0.10420 | 2.5268 | 2.3233 | 0.2035 |
| 2005 | 0.39401 | 0.36067 | 0.03334 | 0.37573 | 0.34394 | 0.03180 | 1.03226 | 0.94524 | 0.08702 | 0.78862 | 0.72214 | 0.06648 | 1.29983 | 1.18983 | 0.10999 | 2.5387 | 2.3239 | 0.2148 |
| 2006 | 0.39594 | 0.36076 | 0.03518 | 0.37757 | 0.34403 | 0.03355 | 1.03733 | 0.94550 | 0.09183 | 0.79248 | 0.72233 | 0.07016 | 1.30620 | 1.19015 | 0.11605 | 2.5512 | 2.3245 | 0.2267 |
| 2007 | 0.39796 | 0.36086 | 0.03710 | 0.37950 | 0.34412 | 0.03538 | 1.04262 | 0.94576 | 0.09686 | 0.79653 | 0.72253 | 0.07400 | 1.31287 | 1.19048 | 0.12239 | 2.5642 | 2.3252 | 0.2390 |
| 2008 | 0.40008 | 0.36097 | 0.03911 | 0.38152 | 0.34422 | 0.03730 | 1.04816 | 0.94603 | 0.10213 | 0.80076 | 0.72273 | 0.07802 | 1.31984 | 1.19082 | 0.12902 | 2.5778 | 2.3258 | 0.2520 |
| 2009 | 0.40229 | 0.36107 | 0.04121 | 0.38362 | 0.34432 | 0.03930 | 1.05395 | 0.94630 | 0.10764 | 0.80518 | 0.72295 | 0.08224 | 1.32713 | 1.19117 | 0.13597 | 2.5921 | 2.3265 | 0.2656 |
| 2010 | 0.40460 | 0.36118 | 0.04342 | 0.38583 | 0.34443 | 0.04140 | 1.06001 | 0.94659 | 0.11342 | 0.80981 | 0.72317 | 0.08665 | 1.33477 | 1.19153 | 0.14324 | 2.6070 | 2.3272 | 0.2798 |

Fuente: Elaboración propia a partir de los cuadros N° A.5.5 y A. 5.10

Cuadro N° A.5.16
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 7%, TRAMO
1. SITUACIÓN SIN PROYECTO
(km 21-42)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 91.04 | 78.07 | 75.35 | 0.23066 | 0.26900 | 0.27871 | 2.68486 | 2.56031 | 8.85729 | 7.03404 | 5.37378 | 17.29939 | 26.51029 |
| 1996 | 90.33 | 77.46 | 74.76 | 0.23247 | 0.27111 | 0.28090 | 2.70598 | 2.58045 | 8.92695 | 7.08937 | 5.41605 | 17.43545 | 26.71880 |
| 1997 | 89.57 | 76.81 | 74.13 | 0.23445 | 0.27342 | 0.28329 | 2.72895 | 2.60235 | 9.00272 | 7.14954 | 5.46202 | 17.58344 | 26.94558 |
| 1998 | 88.76 | 76.11 | 73.46 | 0.23659 | 0.27592 | 0.28588 | 2.75396 | 2.62620 | 9.08523 | 7.21506 | 5.51208 | 17.74459 | 27.19253 |
| 1999 | 87.89 | 75.36 | 72.74 | 0.23894 | 0.27865 | 0.28872 | 2.78123 | 2.65221 | 9.17520 | 7.28652 | 5.56667 | 17.92032 | 27.46183 |
| 2000 | 86.96 | 74.56 | 71.97 | 0.24150 | 0.28164 | 0.29181 | 2.81102 | 2.68061 | 9.27347 | 7.36456 | 5.62629 | 18.11225 | 27.75595 |
| 2001 | 85.97 | 73.71 | 71.14 | 0.24428 | 0.28488 | 0.29517 | 2.84342 | 2.71151 | 9.38037 | 7.44945 | 5.69114 | 18.32103 | 28.07589 |
| 2002 | 85.05 | 72.93 | 70.39 | 0.24690 | 0.28794 | 0.29834 | 2.87392 | 2.74060 | 9.48098 | 7.52935 | 5.75218 | 18.51754 | 28.37704 |
| 2003 | 84.08 | 72.09 | 69.58 | 0.24977 | 0.29128 | 0.30180 | 2.90729 | 2.77242 | 9.59106 | 7.61677 | 5.81897 | 18.73254 | 28.70651 |
| 2004 | 83.03 | 71.20 | 68.72 | 0.25291 | 0.29495 | 0.30560 | 2.94386 | 2.80729 | 9.71171 | 7.71259 | 5.89217 | 18.96819 | 29.06762 |
| 2005 | 81.92 | 70.24 | 67.79 | 0.25636 | 0.29897 | 0.30977 | 2.98403 | 2.84559 | 9.84421 | 7.81781 | 5.97256 | 19.22698 | 29.46421 |
| 2006 | 80.72 | 69.22 | 66.80 | 0.26016 | 0.30340 | 0.31436 | 3.02824 | 2.88775 | 9.99006 | 7.93364 | 6.06104 | 19.51183 | 29.90072 |
| 2007 | 79.44 | 68.12 | 65.74 | 0.26435 | 0.30829 | 0.31942 | 3.07701 | 2.93426 | 10.15097 | 8.06143 | 6.15867 | 19.82611 | 30.38234 |
| 2008 | 78.07 | 66.94 | 64.61 | 0.26898 | 0.31369 | 0.32502 | 3.13097 | 2.98572 | 10.32899 | 8.20280 | 6.26668 | 20.17381 | 30.91516 |
| 2009 | 76.12 | 65.27 | 63.00 | 0.27587 | 0.32172 | 0.33334 | 3.21111 | 3.06214 | 10.59334 | 8.41274 | 6.42706 | 20.69012 | 31.70638 |
| 2010 | 74.01 | 63.46 | 61.25 | 0.28374 | 0.33090 | 0.34285 | 3.30270 | 3.14948 | 10.89551 | 8.65270 | 6.61039 | 21.28029 | 32.61079 |

FUENTE: Elaboración propia

Cuadro N° A.5.17
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 7%, TRAMO
2. SITUACIÓN SIN PROYECTO
(km 42-88)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 90.25 | 77.39 | 74.69 | 0.50969 | 0.59441 | 0.61587 | 5.93277 | 5.65754 | 19.57203 | 15.54319 | 11.87450 | 38.22663 | 58.58004 |
| 1996 | 90.25 | 77.39 | 74.69 | 0.50969 | 0.59441 | 0.61587 | 5.93277 | 5.65754 | 19.57203 | 15.54319 | 11.87450 | 38.22663 | 58.58004 |
| 1997 | 90.25 | 77.39 | 74.69 | 0.50969 | 0.59441 | 0.61587 | 5.93277 | 5.65754 | 19.57203 | 15.54319 | 11.87450 | 38.22663 | 58.58004 |
| 1998 | 90.25 | 77.39 | 74.69 | 0.50969 | 0.59441 | 0.61587 | 5.93277 | 5.65754 | 19.57203 | 15.54319 | 11.87450 | 38.22663 | 58.58004 |
| 1999 | 90.25 | 77.39 | 74.69 | 0.50969 | 0.59441 | 0.61587 | 5.93277 | 5.65754 | 19.57203 | 15.54319 | 11.87450 | 38.22663 | 58.58004 |
| 2000 | 90.25 | 77.39 | 74.69 | 0.50969 | 0.59441 | 0.61587 | 5.93277 | 5.65754 | 19.57203 | 15.54319 | 11.87450 | 38.22663 | 58.58004 |
| 2001 | 90.25 | 77.39 | 74.69 | 0.50969 | 0.59441 | 0.61587 | 5.93277 | 5.65754 | 19.57203 | 15.54319 | 11.87450 | 38.22663 | 58.58004 |
| 2002 | 90.25 | 77.39 | 74.69 | 0.50969 | 0.59441 | 0.61587 | 5.93277 | 5.65754 | 19.57203 | 15.54319 | 11.87450 | 38.22663 | 58.58004 |
| 2003 | 90.25 | 77.39 | 74.69 | 0.50969 | 0.59441 | 0.61587 | 5.93277 | 5.65754 | 19.57203 | 15.54319 | 11.87450 | 38.22663 | 58.58004 |
| 2004 | 90.25 | 77.39 | 74.69 | 0.50969 | 0.59441 | 0.61587 | 5.93277 | 5.65754 | 19.57203 | 15.54319 | 11.87450 | 38.22663 | 58.58004 |
| 2005 | 90.25 | 77.39 | 74.69 | 0.50969 | 0.59441 | 0.61587 | 5.93277 | 5.65754 | 19.57203 | 15.54319 | 11.87450 | 38.22663 | 58.58004 |
| 2006 | 90.25 | 77.39 | 74.69 | 0.50969 | 0.59441 | 0.61587 | 5.93277 | 5.65754 | 19.57203 | 15.54319 | 11.87450 | 38.22663 | 58.58004 |
| 2007 | 90.25 | 77.39 | 74.69 | 0.50969 | 0.59441 | 0.61587 | 5.93277 | 5.65754 | 19.57203 | 15.54319 | 11.87450 | 38.22663 | 58.58004 |
| 2008 | 90.25 | 77.39 | 74.69 | 0.50969 | 0.59441 | 0.61587 | 5.93277 | 5.65754 | 19.57203 | 15.54319 | 11.87450 | 38.22663 | 58.58004 |
| 2009 | 90.25 | 77.39 | 74.69 | 0.50969 | 0.59441 | 0.61587 | 5.93277 | 5.65754 | 19.57203 | 15.54319 | 11.87450 | 38.22663 | 58.58004 |
| 2010 | 90.25 | 77.39 | 74.69 | 0.50969 | 0.59441 | 0.61587 | 5.93277 | 5.65754 | 19.57203 | 15.54319 | 11.87450 | 38.22663 | 58.58004 |

FUENTE: Elaboración propia

Cuadro N° A.5.18
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 7%, TRAMO
3. SITUACIÓN SIN PROYECTO
(km 88-103)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 89.41 | 76.66 | 73.99 | 0.16777 | 0.19566 | 0.20273 | 1.95289 | 1.86229 | 6.44253 | 5.11635 | 3.90873 | 12.58306 | 19.28279 |
| 1996 | 88.94 | 76.26 | 73.61 | 0.16865 | 0.19668 | 0.20379 | 1.96309 | 1.87202 | 6.47619 | 5.14309 | 3.92915 | 12.64880 | 19.38354 |
| 1997 | 88.44 | 75.84 | 73.20 | 0.16960 | 0.19779 | 0.20493 | 1.97413 | 1.88255 | 6.51260 | 5.17200 | 3.95124 | 12.71992 | 19.49252 |
| 1998 | 87.91 | 75.38 | 72.75 | 0.17063 | 0.19899 | 0.20617 | 1.98608 | 1.89394 | 6.55201 | 5.20330 | 3.97516 | 12.79690 | 19.61049 |
| 1999 | 87.34 | 74.89 | 72.28 | 0.17174 | 0.20028 | 0.20752 | 1.99902 | 1.90629 | 6.59472 | 5.23721 | 4.00106 | 12.88030 | 19.73830 |
| 2000 | 86.73 | 74.37 | 71.78 | 0.17294 | 0.20169 | 0.20897 | 2.01306 | 1.91967 | 6.64103 | 5.27400 | 4.02916 | 12.97076 | 19.87693 |
| 2001 | 86.08 | 73.81 | 71.24 | 0.17425 | 0.20322 | 0.21056 | 2.02830 | 1.93421 | 6.69131 | 5.31393 | 4.05967 | 13.06897 | 20.02743 |
| 2002 | 85.30 | 73.14 | 70.59 | 0.17586 | 0.20509 | 0.21250 | 2.04701 | 1.95205 | 6.75302 | 5.36293 | 4.09711 | 13.18950 | 20.21212 |
| 2003 | 84.44 | 72.41 | 69.88 | 0.17764 | 0.20717 | 0.21465 | 2.06772 | 1.97180 | 6.82135 | 5.41719 | 4.13856 | 13.32294 | 20.41662 |
| 2004 | 83.53 | 71.62 | 69.13 | 0.17958 | 0.20943 | 0.21700 | 2.09035 | 1.99338 | 6.89600 | 5.47648 | 4.18386 | 13.46875 | 20.64007 |
| 2005 | 82.55 | 70.78 | 68.32 | 0.18171 | 0.21192 | 0.21957 | 2.11512 | 2.01700 | 6.97771 | 5.54137 | 4.23343 | 13.62835 | 20.88464 |
| 2006 | 81.50 | 69.89 | 67.45 | 0.18404 | 0.21464 | 0.22239 | 2.14228 | 2.04290 | 7.06732 | 5.61253 | 4.28780 | 13.80336 | 21.15282 |
| 2007 | 80.38 | 68.93 | 66.52 | 0.18661 | 0.21763 | 0.22549 | 2.17213 | 2.07136 | 7.16578 | 5.69073 | 4.34753 | 13.99566 | 21.44752 |
| 2008 | 79.18 | 67.90 | 65.53 | 0.18943 | 0.22092 | 0.22890 | 2.20500 | 2.10270 | 7.27422 | 5.77684 | 4.41332 | 14.20745 | 21.77208 |
| 2009 | 77.85 | 66.76 | 64.43 | 0.19267 | 0.22470 | 0.23281 | 2.24268 | 2.13864 | 7.39853 | 5.87557 | 4.48875 | 14.45026 | 22.14417 |
| 2010 | 75.81 | 65.00 | 62.74 | 0.19787 | 0.23076 | 0.23910 | 2.30324 | 2.19639 | 7.59831 | 6.03423 | 4.60996 | 14.84046 | 22.74212 |

FUENTE: Elaboración propia

Cuadro N° A.5.19
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 7%, TRAMO
4. SITUACIÓN SIN PROYECTO
(km 103-112)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 84.76 | 72.68 | 70.14 | 0.10619 | 0.12384 | 0.12831 | 1.23602 | 1.17868 | 4.07760 | 3.23824 | 2.47391 | 7.96406 | 12.20445 |
| 1996 | 84.06 | 72.08 | 69.57 | 0.10707 | 0.12486 | 0.12937 | 1.24626 | 1.18845 | 4.11138 | 3.26506 | 2.49440 | 8.03004 | 12.30555 |
| 1997 | 83.31 | 71.44 | 68.95 | 0.10802 | 0.12598 | 0.13053 | 1.25741 | 1.19907 | 4.14815 | 3.29427 | 2.51671 | 8.10185 | 12.41561 |
| 1998 | 82.52 | 70.76 | 68.29 | 0.10907 | 0.12720 | 0.13179 | 1.26956 | 1.21066 | 4.18823 | 3.32610 | 2.54103 | 8.18013 | 12.53557 |
| 1999 | 81.27 | 69.68 | 67.26 | 0.11075 | 0.12915 | 0.13382 | 1.28908 | 1.22927 | 4.25263 | 3.37724 | 2.58010 | 8.30591 | 12.72832 |
| 2000 | 80.27 | 68.83 | 66.43 | 0.11212 | 0.13076 | 0.13548 | 1.30508 | 1.24453 | 4.30541 | 3.41915 | 2.61212 | 8.40900 | 12.88629 |
| 2001 | 79.21 | 67.92 | 65.55 | 0.11363 | 0.13252 | 0.13730 | 1.32264 | 1.26128 | 4.36335 | 3.46517 | 2.64728 | 8.52218 | 13.05973 |
| 2002 | 78.06 | 66.94 | 64.61 | 0.11529 | 0.13445 | 0.13931 | 1.34197 | 1.27971 | 4.42711 | 3.51580 | 2.68596 | 8.64670 | 13.25055 |
| 2003 | 76.84 | 65.89 | 63.60 | 0.11712 | 0.13659 | 0.14152 | 1.36328 | 1.30004 | 4.49742 | 3.57164 | 2.72862 | 8.78403 | 13.46100 |
| 2004 | 75.54 | 64.77 | 62.51 | 0.11915 | 0.13895 | 0.14397 | 1.38685 | 1.32251 | 4.57518 | 3.63339 | 2.77579 | 8.93589 | 13.69372 |
| 2005 | 74.14 | 63.57 | 61.36 | 0.12139 | 0.14157 | 0.14668 | 1.41299 | 1.34744 | 4.66140 | 3.70187 | 2.82811 | 9.10430 | 13.95181 |
| 2006 | 72.65 | 62.29 | 60.12 | 0.12389 | 0.14448 | 0.14970 | 1.44207 | 1.37517 | 4.75734 | 3.77806 | 2.88632 | 9.29168 | 14.23896 |
| 2007 | 71.05 | 60.92 | 58.80 | 0.12668 | 0.14774 | 0.15307 | 1.47454 | 1.40614 | 4.86447 | 3.86313 | 2.95131 | 9.50091 | 14.55959 |
| 2008 | 64.29 | 55.13 | 53.21 | 0.13999 | 0.16326 | 0.16916 | 1.62950 | 1.55390 | 5.37566 | 4.26910 | 3.26146 | 10.49934 | 16.08962 |
| 2009 | 61.39 | 52.64 | 50.81 | 0.14660 | 0.17097 | 0.17714 | 1.70641 | 1.62725 | 5.62940 | 4.47060 | 3.41540 | 10.99492 | 16.84906 |
| 2010 | 58.29 | 49.98 | 48.24 | 0.15440 | 0.18006 | 0.18656 | 1.79718 | 1.71380 | 5.92883 | 4.70840 | 3.59707 | 11.57975 | 17.74528 |

FUENTE: Elaboración propia

Cuadro N° A.5.20
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 7%, TRAMO
5. SITUACIÓN SIN PROYECTO
(km 112-115)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 92.23 | 79.08 | 76.32 | 0.03253 | 0.03794 | 0.03931 | 0.37864 | 0.36107 | 1.24912 | 0.99199 | 0.75785 | 2.43968 | 3.73866 |
| 1996 | 91.61 | 78.55 | 75.82 | 0.03275 | 0.03819 | 0.03957 | 0.38117 | 0.36349 | 1.25748 | 0.99863 | 0.76292 | 2.45602 | 3.76370 |
| 1997 | 90.96 | 77.99 | 75.27 | 0.03298 | 0.03847 | 0.03985 | 0.38392 | 0.36611 | 1.26655 | 1.00584 | 0.76843 | 2.47374 | 3.79086 |
| 1998 | 90.25 | 77.39 | 74.69 | 0.03324 | 0.03876 | 0.04016 | 0.38691 | 0.36896 | 1.27641 | 1.01366 | 0.77441 | 2.49299 | 3.82036 |
| 1999 | 89.50 | 76.75 | 74.07 | 0.03352 | 0.03909 | 0.04050 | 0.39016 | 0.37206 | 1.28713 | 1.02218 | 0.78091 | 2.51392 | 3.85243 |
| 2000 | 88.70 | 76.06 | 73.40 | 0.03382 | 0.03944 | 0.04087 | 0.39370 | 0.37543 | 1.29879 | 1.03144 | 0.78799 | 2.53671 | 3.88735 |
| 2001 | 87.84 | 75.32 | 72.69 | 0.03415 | 0.03983 | 0.04127 | 0.39755 | 0.37911 | 1.31152 | 1.04154 | 0.79571 | 2.56155 | 3.92543 |
| 2002 | 86.92 | 74.53 | 71.93 | 0.03452 | 0.04025 | 0.04171 | 0.40176 | 0.38313 | 1.32541 | 1.05258 | 0.80413 | 2.58868 | 3.96700 |
| 2003 | 85.94 | 73.69 | 71.12 | 0.03491 | 0.04071 | 0.04218 | 0.40633 | 0.38748 | 1.34046 | 1.06453 | 0.81327 | 2.61808 | 4.01205 |
| 2004 | 85.03 | 72.91 | 70.37 | 0.03528 | 0.04115 | 0.04263 | 0.41069 | 0.39164 | 1.35487 | 1.07597 | 0.82201 | 2.64623 | 4.05519 |
| 2005 | 84.05 | 72.07 | 69.56 | 0.03569 | 0.04163 | 0.04313 | 0.41547 | 0.39620 | 1.37064 | 1.08850 | 0.83158 | 2.67702 | 4.10238 |
| 2006 | 83.00 | 71.17 | 68.69 | 0.03614 | 0.04215 | 0.04367 | 0.42071 | 0.40120 | 1.38792 | 1.10222 | 0.84206 | 2.71078 | 4.15411 |
| 2007 | 81.88 | 70.21 | 67.76 | 0.03664 | 0.04273 | 0.04427 | 0.42647 | 0.40668 | 1.40690 | 1.11730 | 0.85358 | 2.74785 | 4.21092 |
| 2008 | 80.68 | 69.18 | 66.77 | 0.03718 | 0.04336 | 0.04493 | 0.43280 | 0.41272 | 1.42780 | 1.13389 | 0.86625 | 2.78866 | 4.27346 |
| 2009 | 79.40 | 68.08 | 65.71 | 0.03778 | 0.04406 | 0.04565 | 0.43979 | 0.41939 | 1.45085 | 1.15220 | 0.88024 | 2.83369 | 4.34247 |
| 2010 | 78.03 | 66.91 | 64.58 | 0.03845 | 0.04484 | 0.04646 | 0.44752 | 0.42676 | 1.47636 | 1.17246 | 0.89572 | 2.88351 | 4.41881 |

FUENTE: Elaboración propia

Cuadro N° A.5.21

**COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 7%, TRAMO
1. SITUACIÓN CON PROYECTO
(km 21-42)**

| Año | Velocidad promedio (km/h). Vehículos ligeros y bus | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 96.98 | 83.17 | 80.28 | 0.21653 | 0.25248 | 0.26160 | 2.52041 | 2.40348 | 8.31475 | 6.60211 | 5.04380 | 16.23974 | 24.88455 |
| 1996 | 96.94 | 83.14 | 80.24 | 0.21662 | 0.25258 | 0.26171 | 2.52145 | 2.40447 | 8.31818 | 6.60484 | 5.04588 | 16.24644 | 24.89482 |
| 1997 | 96.90 | 83.10 | 80.21 | 0.21671 | 0.25270 | 0.26182 | 2.52256 | 2.40553 | 8.32185 | 6.60775 | 5.04811 | 16.25361 | 24.90581 |
| 1998 | 96.86 | 83.06 | 80.17 | 0.21682 | 0.25282 | 0.26195 | 2.52375 | 2.40667 | 8.32578 | 6.61088 | 5.05050 | 16.26129 | 24.91758 |
| 1999 | 96.81 | 83.02 | 80.13 | 0.21693 | 0.25294 | 0.26208 | 2.52503 | 2.40789 | 8.33000 | 6.61422 | 5.05305 | 16.26952 | 24.93019 |
| 2000 | 96.75 | 82.98 | 80.09 | 0.21704 | 0.25308 | 0.26222 | 2.52640 | 2.40919 | 8.33451 | 6.61781 | 5.05579 | 16.27834 | 24.94370 |
| 2001 | 96.70 | 82.93 | 80.04 | 0.21717 | 0.25323 | 0.26237 | 2.52786 | 2.41059 | 8.33934 | 6.62164 | 5.05872 | 16.28778 | 24.95816 |
| 2002 | 96.64 | 82.88 | 79.99 | 0.21731 | 0.25338 | 0.26253 | 2.52943 | 2.41209 | 8.34452 | 6.62576 | 5.06187 | 16.29789 | 24.97386 |
| 2003 | 96.57 | 82.82 | 79.94 | 0.21745 | 0.25355 | 0.26271 | 2.53111 | 2.41369 | 8.35007 | 6.63016 | 5.06523 | 16.30873 | 24.99027 |
| 2004 | 96.51 | 82.76 | 79.88 | 0.21760 | 0.25373 | 0.26290 | 2.53292 | 2.41541 | 8.35601 | 6.63488 | 5.06884 | 16.32034 | 25.00806 |
| 2005 | 96.43 | 82.70 | 79.82 | 0.21777 | 0.25393 | 0.26310 | 2.53485 | 2.41725 | 8.36238 | 6.63994 | 5.07270 | 16.33278 | 25.02712 |
| 2006 | 96.35 | 82.63 | 79.75 | 0.21795 | 0.25413 | 0.26331 | 2.53692 | 2.41922 | 8.36921 | 6.64536 | 5.07684 | 16.34611 | 25.04755 |
| 2007 | 96.27 | 82.56 | 79.68 | 0.21814 | 0.25436 | 0.26354 | 2.53913 | 2.42134 | 8.37653 | 6.65117 | 5.08128 | 16.36040 | 25.06945 |
| 2008 | 96.18 | 82.48 | 79.61 | 0.21834 | 0.25459 | 0.26379 | 2.54151 | 2.42361 | 8.38437 | 6.65740 | 5.08604 | 16.37572 | 25.09293 |
| 2009 | 96.08 | 82.40 | 79.53 | 0.21856 | 0.25485 | 0.26405 | 2.54406 | 2.42604 | 8.39278 | 6.66407 | 5.09114 | 16.39215 | 25.11809 |
| 2010 | 95.98 | 82.31 | 79.44 | 0.21880 | 0.25512 | 0.26434 | 2.54679 | 2.42864 | 8.40179 | 6.67123 | 5.09661 | 16.40976 | 25.14507 |

FUENTE: Elaboración propia

Cuadro N° A.5.22
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 7%, TRAMO
2. SITUACIÓN CON PROYECTO
(km 42-88)

| Año | Velocidad promedio (km/h). Vehículos ligeros y bus | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 97.11 | 83.27 | 80.37 | 0.47370 | 0.55244 | 0.57238 | 5.51384 | 5.25804 | 18.18998 | 14.44563 | 11.03600 | 35.52731 | 54.44350 |
| 1996 | 97.08 | 83.24 | 80.34 | 0.47385 | 0.55261 | 0.57257 | 5.51562 | 5.25974 | 18.19585 | 14.45029 | 11.03956 | 35.53877 | 54.46106 |
| 1997 | 97.04 | 83.21 | 80.31 | 0.47401 | 0.55280 | 0.57277 | 5.51752 | 5.26155 | 18.20213 | 14.45528 | 11.04337 | 35.55104 | 54.47986 |
| 1998 | 97.01 | 83.18 | 80.28 | 0.47419 | 0.55301 | 0.57298 | 5.51956 | 5.26350 | 18.20885 | 14.46062 | 11.04745 | 35.56417 | 54.49998 |
| 1999 | 96.97 | 83.15 | 80.25 | 0.47438 | 0.55323 | 0.57320 | 5.52174 | 5.26558 | 18.21606 | 14.46634 | 11.05182 | 35.57823 | 54.52153 |
| 2000 | 96.93 | 83.11 | 80.22 | 0.47458 | 0.55346 | 0.57345 | 5.52408 | 5.26781 | 18.22377 | 14.47246 | 11.05650 | 35.59329 | 54.54461 |
| 2001 | 96.88 | 83.08 | 80.18 | 0.47479 | 0.55371 | 0.57371 | 5.52658 | 5.27019 | 18.23202 | 14.47902 | 11.06151 | 35.60942 | 54.56933 |
| 2002 | 96.84 | 83.04 | 80.14 | 0.47502 | 0.55398 | 0.57399 | 5.52926 | 5.27275 | 18.24087 | 14.48604 | 11.06687 | 35.62670 | 54.59580 |
| 2003 | 96.79 | 82.99 | 80.10 | 0.47527 | 0.55427 | 0.57428 | 5.53213 | 5.27549 | 18.25034 | 14.49357 | 11.07262 | 35.64520 | 54.62415 |
| 2004 | 96.73 | 82.95 | 80.06 | 0.47553 | 0.55458 | 0.57460 | 5.53521 | 5.27842 | 18.26049 | 14.50163 | 11.07878 | 35.66502 | 54.65453 |
| 2005 | 96.68 | 82.90 | 80.01 | 0.47582 | 0.55491 | 0.57495 | 5.53851 | 5.28156 | 18.27136 | 14.51026 | 11.08537 | 35.68625 | 54.68706 |
| 2006 | 96.61 | 82.84 | 79.96 | 0.47612 | 0.55526 | 0.57531 | 5.54204 | 5.28493 | 18.28300 | 14.51951 | 11.09244 | 35.70899 | 54.72191 |
| 2007 | 96.55 | 82.79 | 79.90 | 0.47644 | 0.55564 | 0.57570 | 5.54582 | 5.28854 | 18.29548 | 14.52941 | 11.10001 | 35.73336 | 54.75926 |
| 2008 | 96.48 | 82.73 | 79.84 | 0.47679 | 0.55605 | 0.57612 | 5.54987 | 5.29240 | 18.30885 | 14.54003 | 11.10812 | 35.75947 | 54.79927 |
| 2009 | 96.40 | 82.66 | 79.78 | 0.47717 | 0.55648 | 0.57658 | 5.55421 | 5.29654 | 18.32318 | 14.55141 | 11.11681 | 35.78745 | 54.84215 |
| 2010 | 96.32 | 82.59 | 79.71 | 0.47757 | 0.55695 | 0.57706 | 5.55887 | 5.30098 | 18.33853 | 14.56360 | 11.12613 | 35.81744 | 54.88811 |

FUENTE: Elaboración propia

Cuadro N° A.5.23
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 7%, TRAMO
3. SITUACIÓN CON PROYECTO
(km 88-103)

| Año | Velocidad promedio (km/h). Vehículos ligeros y bus | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 97.02 | 83.19 | 80.29 | 0.15461 | 0.18031 | 0.18682 | 1.79967 | 1.71618 | 5.93705 | 4.71493 | 3.60206 | 11.59581 | 17.76989 |
| 1996 | 96.98 | 83.16 | 80.26 | 0.15467 | 0.18038 | 0.18689 | 1.80037 | 1.71685 | 5.93936 | 4.71676 | 3.60345 | 11.60031 | 17.77678 |
| 1997 | 96.94 | 83.12 | 80.23 | 0.15474 | 0.18046 | 0.18697 | 1.80112 | 1.71756 | 5.94182 | 4.71872 | 3.60495 | 11.60513 | 17.78417 |
| 1998 | 96.90 | 83.09 | 80.19 | 0.15480 | 0.18054 | 0.18705 | 1.80192 | 1.71832 | 5.94447 | 4.72082 | 3.60655 | 11.61029 | 17.79208 |
| 1999 | 96.85 | 83.05 | 80.15 | 0.15488 | 0.18062 | 0.18714 | 1.80277 | 1.71914 | 5.94730 | 4.72307 | 3.60827 | 11.61582 | 17.80055 |
| 2000 | 96.80 | 83.00 | 80.11 | 0.15496 | 0.18071 | 0.18724 | 1.80369 | 1.72002 | 5.95033 | 4.72547 | 3.61011 | 11.62174 | 17.80962 |
| 2001 | 96.75 | 82.96 | 80.07 | 0.15504 | 0.18081 | 0.18734 | 1.80468 | 1.72096 | 5.95358 | 4.72805 | 3.61208 | 11.62808 | 17.81934 |
| 2002 | 96.69 | 82.91 | 80.02 | 0.15513 | 0.18092 | 0.18745 | 1.80573 | 1.72196 | 5.95705 | 4.73081 | 3.61419 | 11.63487 | 17.82975 |
| 2003 | 96.63 | 82.86 | 79.97 | 0.15523 | 0.18103 | 0.18757 | 1.80686 | 1.72304 | 5.96078 | 4.73377 | 3.61645 | 11.64215 | 17.84090 |
| 2004 | 96.57 | 82.80 | 79.92 | 0.15533 | 0.18115 | 0.18769 | 1.80807 | 1.72419 | 5.96477 | 4.73694 | 3.61887 | 11.64994 | 17.85285 |
| 2005 | 96.50 | 82.74 | 79.86 | 0.15544 | 0.18128 | 0.18783 | 1.80937 | 1.72543 | 5.96905 | 4.74034 | 3.62147 | 11.65830 | 17.86565 |
| 2006 | 96.42 | 82.68 | 79.80 | 0.15556 | 0.18142 | 0.18797 | 1.81076 | 1.72675 | 5.97363 | 4.74398 | 3.62425 | 11.66725 | 17.87937 |
| 2007 | 96.34 | 82.61 | 79.73 | 0.15569 | 0.18157 | 0.18813 | 1.81225 | 1.72817 | 5.97855 | 4.74788 | 3.62723 | 11.67685 | 17.89407 |
| 2008 | 96.26 | 82.54 | 79.66 | 0.15583 | 0.18173 | 0.18829 | 1.81384 | 1.72970 | 5.98381 | 4.75206 | 3.63042 | 11.68713 | 17.90983 |
| 2009 | 96.17 | 82.46 | 79.59 | 0.15598 | 0.18190 | 0.18847 | 1.81555 | 1.73133 | 5.98945 | 4.75654 | 3.63385 | 11.69815 | 17.92673 |
| 2010 | 96.07 | 82.38 | 79.51 | 0.15613 | 0.18209 | 0.18866 | 1.81739 | 1.73308 | 5.99551 | 4.76135 | 3.63752 | 11.70997 | 17.94484 |

FUENTE: Elaboración propia

Cuadro N° A.5.24
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 7%, TRAMO
4. SITUACIÓN CON PROYECTO
(km 103-112)

| Año | Velocidad promedio (km/h). Vehículos ligeros y bus | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 96.70 | 82.91 | 80.02 | 0.09308 | 0.10855 | 0.11247 | 1.08340 | 1.03314 | 3.57409 | 2.83838 | 2.16843 | 6.98065 | 10.69743 |
| 1996 | 96.64 | 82.86 | 79.97 | 0.09313 | 0.10861 | 0.11254 | 1.08407 | 1.03378 | 3.57632 | 2.84014 | 2.16978 | 6.98499 | 10.70409 |
| 1997 | 96.57 | 82.81 | 79.92 | 0.09320 | 0.10869 | 0.11261 | 1.08479 | 1.03447 | 3.57870 | 2.84204 | 2.17123 | 6.98965 | 10.71123 |
| 1998 | 96.50 | 82.75 | 79.86 | 0.09326 | 0.10876 | 0.11269 | 1.08557 | 1.03521 | 3.58126 | 2.84407 | 2.17278 | 6.99464 | 10.71887 |
| 1999 | 96.43 | 82.68 | 79.80 | 0.09333 | 0.10885 | 0.11278 | 1.08640 | 1.03600 | 3.58399 | 2.84624 | 2.17444 | 6.99999 | 10.72707 |
| 2000 | 96.35 | 82.62 | 79.74 | 0.09341 | 0.10894 | 0.11287 | 1.08729 | 1.03685 | 3.58693 | 2.84857 | 2.17622 | 7.00572 | 10.73585 |
| 2001 | 96.27 | 82.54 | 79.67 | 0.09349 | 0.10903 | 0.11297 | 1.08824 | 1.03776 | 3.59007 | 2.85107 | 2.17812 | 7.01186 | 10.74526 |
| 2002 | 96.18 | 82.47 | 79.59 | 0.09358 | 0.10913 | 0.11307 | 1.08926 | 1.03873 | 3.59344 | 2.85374 | 2.18017 | 7.01845 | 10.75535 |
| 2003 | 96.08 | 82.38 | 79.51 | 0.09367 | 0.10924 | 0.11319 | 1.09036 | 1.03977 | 3.59706 | 2.85662 | 2.18236 | 7.02550 | 10.76617 |
| 2004 | 95.98 | 82.30 | 79.43 | 0.09377 | 0.10936 | 0.11331 | 1.09153 | 1.04089 | 3.60093 | 2.85969 | 2.18471 | 7.03307 | 10.77777 |
| 2005 | 95.86 | 82.20 | 79.34 | 0.09388 | 0.10949 | 0.11344 | 1.09279 | 1.04210 | 3.60509 | 2.86299 | 2.18723 | 7.04119 | 10.79020 |
| 2006 | 95.75 | 82.10 | 79.24 | 0.09400 | 0.10962 | 0.11358 | 1.09414 | 1.04338 | 3.60955 | 2.86653 | 2.18994 | 7.04989 | 10.80354 |
| 2007 | 95.62 | 81.99 | 79.13 | 0.09412 | 0.10977 | 0.11373 | 1.09559 | 1.04477 | 3.61433 | 2.87033 | 2.19284 | 7.05923 | 10.81786 |
| 2008 | 95.48 | 81.87 | 79.02 | 0.09426 | 0.10992 | 0.11389 | 1.09715 | 1.04625 | 3.61946 | 2.87440 | 2.19595 | 7.06925 | 10.83321 |
| 2009 | 95.34 | 81.75 | 78.90 | 0.09440 | 0.11009 | 0.11407 | 1.09882 | 1.04784 | 3.62496 | 2.87878 | 2.19929 | 7.08000 | 10.84969 |
| 2010 | 95.18 | 81.62 | 78.77 | 0.09455 | 0.11027 | 0.11425 | 1.10061 | 1.04955 | 3.63087 | 2.88347 | 2.20288 | 7.09155 | 10.86737 |

FUENTE: Elaboración propia

Cuadro N° A.5.25
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 7%, TRAMO
5. SITUACIÓN CON PROYECTO
(km 112-115)

| Año | Velocidad promedio (km/h). Vehículos ligeros y bus | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 97.03 | 83.20 | 80.30 | 0.03092 | 0.03606 | 0.03736 | 0.35987 | 0.34318 | 1.18721 | 0.94283 | 0.72029 | 2.31877 | 3.55337 |
| 1996 | 97.00 | 83.17 | 80.27 | 0.03093 | 0.03607 | 0.03737 | 0.36001 | 0.34331 | 1.18766 | 0.94318 | 0.72056 | 2.31964 | 3.55471 |
| 1997 | 96.96 | 83.14 | 80.24 | 0.03094 | 0.03608 | 0.03739 | 0.36015 | 0.34344 | 1.18813 | 0.94356 | 0.72085 | 2.32057 | 3.55614 |
| 1998 | 96.92 | 83.10 | 80.21 | 0.03095 | 0.03610 | 0.03740 | 0.36031 | 0.34359 | 1.18865 | 0.94397 | 0.72116 | 2.32157 | 3.55768 |
| 1999 | 96.87 | 83.07 | 80.17 | 0.03097 | 0.03612 | 0.03742 | 0.36047 | 0.34375 | 1.18919 | 0.94440 | 0.72149 | 2.32265 | 3.55932 |
| 2000 | 96.82 | 83.02 | 80.13 | 0.03098 | 0.03613 | 0.03744 | 0.36065 | 0.34392 | 1.18978 | 0.94487 | 0.72185 | 2.32379 | 3.56107 |
| 2001 | 96.77 | 82.98 | 80.09 | 0.03100 | 0.03615 | 0.03746 | 0.36084 | 0.34410 | 1.19041 | 0.94537 | 0.72223 | 2.32502 | 3.56296 |
| 2002 | 96.72 | 82.93 | 80.04 | 0.03102 | 0.03617 | 0.03748 | 0.36105 | 0.34430 | 1.19109 | 0.94590 | 0.72264 | 2.32634 | 3.56498 |
| 2003 | 96.66 | 82.88 | 79.99 | 0.03104 | 0.03620 | 0.03750 | 0.36127 | 0.34451 | 1.19181 | 0.94648 | 0.72308 | 2.32775 | 3.56714 |
| 2004 | 96.60 | 82.83 | 79.94 | 0.03106 | 0.03622 | 0.03753 | 0.36150 | 0.34473 | 1.19258 | 0.94709 | 0.72355 | 2.32926 | 3.56945 |
| 2005 | 96.53 | 82.77 | 79.89 | 0.03108 | 0.03624 | 0.03755 | 0.36175 | 0.34497 | 1.19341 | 0.94775 | 0.72405 | 2.33088 | 3.57193 |
| 2006 | 96.46 | 82.71 | 79.83 | 0.03110 | 0.03627 | 0.03758 | 0.36202 | 0.34523 | 1.19430 | 0.94846 | 0.72459 | 2.33261 | 3.57459 |
| 2007 | 96.38 | 82.64 | 79.76 | 0.03113 | 0.03630 | 0.03761 | 0.36231 | 0.34550 | 1.19525 | 0.94921 | 0.72517 | 2.33447 | 3.57744 |
| 2008 | 96.30 | 82.57 | 79.70 | 0.03115 | 0.03633 | 0.03764 | 0.36262 | 0.34580 | 1.19627 | 0.95002 | 0.72579 | 2.33646 | 3.58049 |
| 2009 | 96.21 | 82.50 | 79.62 | 0.03118 | 0.03636 | 0.03768 | 0.36295 | 0.34611 | 1.19736 | 0.95089 | 0.72645 | 2.33860 | 3.58376 |
| 2010 | 96.12 | 82.42 | 79.55 | 0.03121 | 0.03640 | 0.03771 | 0.36331 | 0.34645 | 1.19853 | 0.95182 | 0.72716 | 2.34089 | 3.58727 |

FUENTE: Elaboración propia

Cuadro N° A.5.26
PROYECTO AMPLIACIÓN A UN 3^{er} CARRIL VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 7%. TRAMO 1

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 2.685 | 2.520 | 0.164 | 2.560 | 2.403 | 0.157 | 7.034 | 6.602 | 0.432 | 5.374 | 5.044 | 0.330 | 8.857 | 8.315 | 0.543 | 17.299 | 16.240 | 1.060 |
| 1996 | 2.706 | 2.521 | 0.185 | 2.580 | 2.404 | 0.176 | 7.089 | 6.605 | 0.485 | 5.416 | 5.046 | 0.370 | 8.927 | 8.318 | 0.609 | 17.435 | 16.246 | 1.189 |
| 1997 | 2.729 | 2.523 | 0.206 | 2.602 | 2.406 | 0.197 | 7.150 | 6.608 | 0.542 | 5.462 | 5.048 | 0.414 | 9.003 | 8.322 | 0.681 | 17.583 | 16.254 | 1.330 |
| 1998 | 2.754 | 2.524 | 0.230 | 2.626 | 2.407 | 0.220 | 7.215 | 6.611 | 0.604 | 5.512 | 5.050 | 0.462 | 9.085 | 8.326 | 0.759 | 17.745 | 16.261 | 1.483 |
| 1999 | 2.781 | 2.525 | 0.256 | 2.652 | 2.408 | 0.244 | 7.287 | 6.614 | 0.672 | 5.567 | 5.053 | 0.514 | 9.175 | 8.330 | 0.845 | 17.920 | 16.270 | 1.651 |
| 2000 | 2.811 | 2.526 | 0.285 | 2.681 | 2.409 | 0.271 | 7.365 | 6.618 | 0.747 | 5.626 | 5.056 | 0.570 | 9.273 | 8.335 | 0.939 | 18.112 | 16.278 | 1.834 |
| 2001 | 2.843 | 2.528 | 0.316 | 2.712 | 2.411 | 0.301 | 7.449 | 6.622 | 0.828 | 5.691 | 5.059 | 0.632 | 9.380 | 8.339 | 1.041 | 18.321 | 16.288 | 2.033 |
| 2002 | 2.874 | 2.529 | 0.344 | 2.741 | 2.412 | 0.329 | 7.529 | 6.626 | 0.904 | 5.752 | 5.062 | 0.690 | 9.481 | 8.345 | 1.136 | 18.518 | 16.298 | 2.220 |
| 2003 | 2.907 | 2.531 | 0.376 | 2.772 | 2.414 | 0.359 | 7.617 | 6.630 | 0.987 | 5.819 | 5.065 | 0.754 | 9.591 | 8.350 | 1.241 | 18.733 | 16.309 | 2.424 |
| 2004 | 2.944 | 2.533 | 0.411 | 2.807 | 2.415 | 0.392 | 7.713 | 6.635 | 1.078 | 5.892 | 5.069 | 0.823 | 9.712 | 8.356 | 1.356 | 18.968 | 16.320 | 2.648 |
| 2005 | 2.984 | 2.535 | 0.449 | 2.846 | 2.417 | 0.428 | 7.818 | 6.640 | 1.178 | 5.973 | 5.073 | 0.900 | 9.844 | 8.362 | 1.482 | 19.227 | 16.333 | 2.894 |
| 2006 | 3.028 | 2.537 | 0.491 | 2.888 | 2.419 | 0.469 | 7.934 | 6.645 | 1.288 | 6.061 | 5.077 | 0.984 | 9.990 | 8.369 | 1.621 | 19.512 | 16.346 | 3.166 |
| 2007 | 3.077 | 2.539 | 0.538 | 2.934 | 2.421 | 0.513 | 8.061 | 6.651 | 1.410 | 6.159 | 5.081 | 1.077 | 10.151 | 8.377 | 1.774 | 19.826 | 16.360 | 3.466 |
| 2008 | 3.131 | 2.542 | 0.589 | 2.986 | 2.424 | 0.562 | 8.203 | 6.657 | 1.545 | 6.267 | 5.086 | 1.181 | 10.329 | 8.384 | 1.945 | 20.174 | 16.376 | 3.798 |
| 2009 | 3.211 | 2.544 | 0.667 | 3.062 | 2.426 | 0.636 | 8.413 | 6.664 | 1.749 | 6.427 | 5.091 | 1.336 | 10.593 | 8.393 | 2.201 | 20.690 | 16.392 | 4.298 |
| 2010 | 3.303 | 2.547 | 0.756 | 3.149 | 2.429 | 0.721 | 8.653 | 6.671 | 1.981 | 6.610 | 5.097 | 1.514 | 10.896 | 8.402 | 2.494 | 21.280 | 16.410 | 4.871 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.16 y A. 5.21

Cuadro N° A.5.27
PROYECTO AMPLIACIÓN A UN 3^{er} CARRIL VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 7%. TRAMO 2

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 5.9328 | 5.5138 | 0.4189 | 5.6575 | 5.2580 | 0.3995 | 15.5432 | 14.4456 | 1.0976 | 11.8745 | 11.0360 | 0.8385 | 19.5720 | 18.1900 | 1.3820 | 38.2266 | 35.5273 | 2.6993 |
| 1996 | 5.9328 | 5.5156 | 0.4172 | 5.6575 | 5.2597 | 0.3978 | 15.5432 | 14.4503 | 1.0929 | 11.8745 | 11.0396 | 0.8349 | 19.5720 | 18.1959 | 1.3762 | 38.2266 | 35.5388 | 2.6879 |
| 1997 | 5.9328 | 5.5175 | 0.4153 | 5.6575 | 5.2616 | 0.3960 | 15.5432 | 14.4553 | 1.0879 | 11.8745 | 11.0434 | 0.8311 | 19.5720 | 18.2021 | 1.3699 | 38.2266 | 35.5510 | 2.6756 |
| 1998 | 5.9328 | 5.5196 | 0.4132 | 5.6575 | 5.2635 | 0.3940 | 15.5432 | 14.4606 | 1.0826 | 11.8745 | 11.0475 | 0.8271 | 19.5720 | 18.2089 | 1.3632 | 38.2266 | 35.5642 | 2.6625 |
| 1999 | 5.9328 | 5.5217 | 0.4110 | 5.6575 | 5.2656 | 0.3920 | 15.5432 | 14.4663 | 1.0769 | 11.8745 | 11.0518 | 0.8227 | 19.5720 | 18.2161 | 1.3560 | 38.2266 | 35.5782 | 2.6484 |
| 2000 | 5.9328 | 5.5241 | 0.4087 | 5.6575 | 5.2678 | 0.3897 | 15.5432 | 14.4725 | 1.0707 | 11.8745 | 11.0565 | 0.8180 | 19.5720 | 18.2238 | 1.3483 | 38.2266 | 35.5933 | 2.6333 |
| 2001 | 5.9328 | 5.5266 | 0.4062 | 5.6575 | 5.2702 | 0.3873 | 15.5432 | 14.4790 | 1.0642 | 11.8745 | 11.0615 | 0.8130 | 19.5720 | 18.2320 | 1.3400 | 38.2266 | 35.6094 | 2.6172 |
| 2002 | 5.9328 | 5.5293 | 0.4035 | 5.6575 | 5.2728 | 0.3848 | 15.5432 | 14.4860 | 1.0571 | 11.8745 | 11.0669 | 0.8076 | 19.5720 | 18.2409 | 1.3312 | 38.2266 | 35.6267 | 2.5999 |
| 2003 | 5.9328 | 5.5321 | 0.4006 | 5.6575 | 5.2755 | 0.3821 | 15.5432 | 14.4936 | 1.0496 | 11.8745 | 11.0726 | 0.8019 | 19.5720 | 18.2503 | 1.3217 | 38.2266 | 35.6452 | 2.5814 |
| 2004 | 5.9328 | 5.5352 | 0.3976 | 5.6575 | 5.2784 | 0.3791 | 15.5432 | 14.5016 | 1.0416 | 11.8745 | 11.0788 | 0.7957 | 19.5720 | 18.2605 | 1.3115 | 38.2266 | 35.6650 | 2.5616 |
| 2005 | 5.9328 | 5.5385 | 0.3943 | 5.6575 | 5.2816 | 0.3760 | 15.5432 | 14.5103 | 1.0329 | 11.8745 | 11.0854 | 0.7891 | 19.5720 | 18.2714 | 1.3007 | 38.2266 | 35.6862 | 2.5404 |
| 2006 | 5.9328 | 5.5420 | 0.3907 | 5.6575 | 5.2849 | 0.3726 | 15.5432 | 14.5195 | 1.0237 | 11.8745 | 11.0924 | 0.7821 | 19.5720 | 18.2830 | 1.2890 | 38.2266 | 35.7090 | 2.5176 |
| 2007 | 5.9328 | 5.5458 | 0.3870 | 5.6575 | 5.2885 | 0.3690 | 15.5432 | 14.5294 | 1.0138 | 11.8745 | 11.1000 | 0.7745 | 19.5720 | 18.2955 | 1.2766 | 38.2266 | 35.7334 | 2.4933 |
| 2008 | 5.9328 | 5.5499 | 0.3829 | 5.6575 | 5.2924 | 0.3651 | 15.5432 | 14.5400 | 1.0032 | 11.8745 | 11.1081 | 0.7664 | 19.5720 | 18.3088 | 1.2632 | 38.2266 | 35.7595 | 2.4672 |
| 2009 | 5.9328 | 5.5542 | 0.3786 | 5.6575 | 5.2965 | 0.3610 | 15.5432 | 14.5514 | 0.9918 | 11.8745 | 11.1168 | 0.7577 | 19.5720 | 18.3232 | 1.2489 | 38.2266 | 35.7875 | 2.4392 |
| 2010 | 5.9328 | 5.5589 | 0.3739 | 5.6575 | 5.3010 | 0.3566 | 15.5432 | 14.5636 | 0.9796 | 11.8745 | 11.1261 | 0.7484 | 19.5720 | 18.3385 | 1.2335 | 38.2266 | 35.8174 | 2.4092 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.17 y A. 5.22

Cuadro N° A.5.28
PROYECTO AMPLIACIÓN A UN 3^{er} CARRIL VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 7%. TRAMO 3

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.95289 | 1.79967 | 0.15322 | 1.86229 | 1.71618 | 0.14611 | 5.11635 | 4.71493 | 0.40142 | 3.90873 | 3.60206 | 0.30667 | 6.44253 | 5.93705 | 0.50547 | 12.5831 | 11.5958 | 0.9873 |
| 1996 | 1.96309 | 1.80037 | 0.16273 | 1.87202 | 1.71685 | 0.15518 | 5.14309 | 4.71676 | 0.42633 | 3.92915 | 3.60345 | 0.32570 | 6.47619 | 5.93936 | 0.53683 | 12.6488 | 11.6003 | 1.0485 |
| 1997 | 1.97413 | 1.80112 | 0.17302 | 1.88255 | 1.71756 | 0.16499 | 5.17200 | 4.71872 | 0.45328 | 3.95124 | 3.60495 | 0.34629 | 6.51260 | 5.94182 | 0.57077 | 12.7199 | 11.6051 | 1.1148 |
| 1998 | 1.98608 | 1.80192 | 0.18416 | 1.89394 | 1.71832 | 0.17562 | 5.20330 | 4.72082 | 0.48248 | 3.97516 | 3.60655 | 0.36860 | 6.55201 | 5.94447 | 0.60754 | 12.7969 | 11.6103 | 1.1866 |
| 1999 | 1.99902 | 1.80277 | 0.19625 | 1.90629 | 1.71914 | 0.18714 | 5.23721 | 4.72307 | 0.51415 | 4.00106 | 3.60827 | 0.39279 | 6.59472 | 5.94730 | 0.64742 | 12.8803 | 11.6158 | 1.2645 |
| 2000 | 2.01306 | 1.80369 | 0.20937 | 1.91967 | 1.72002 | 0.19966 | 5.27400 | 4.72547 | 0.54852 | 4.02916 | 3.61011 | 0.41905 | 6.64103 | 5.95033 | 0.69070 | 12.9708 | 11.6217 | 1.3490 |
| 2001 | 2.02830 | 1.80468 | 0.22363 | 1.93421 | 1.72096 | 0.21325 | 5.31393 | 4.72805 | 0.58588 | 4.05967 | 3.61208 | 0.44759 | 6.69131 | 5.95358 | 0.73774 | 13.0690 | 11.6281 | 1.4409 |
| 2002 | 2.04701 | 1.80573 | 0.24128 | 1.95205 | 1.72196 | 0.23008 | 5.36293 | 4.73081 | 0.63212 | 4.09711 | 3.61419 | 0.48292 | 6.75302 | 5.95705 | 0.79597 | 13.1895 | 11.6349 | 1.5546 |
| 2003 | 2.06772 | 1.80686 | 0.26086 | 1.97180 | 1.72304 | 0.24876 | 5.41719 | 4.73377 | 0.68342 | 4.13856 | 3.61645 | 0.52211 | 6.82135 | 5.96078 | 0.86057 | 13.3229 | 11.6421 | 1.6808 |
| 2004 | 2.09035 | 1.80807 | 0.28228 | 1.99338 | 1.72419 | 0.26918 | 5.47648 | 4.73694 | 0.73954 | 4.18386 | 3.61887 | 0.56498 | 6.89600 | 5.96477 | 0.93123 | 13.4688 | 11.6499 | 1.8188 |
| 2005 | 2.11512 | 1.80937 | 0.30575 | 2.01700 | 1.72543 | 0.29157 | 5.54137 | 4.74034 | 0.80103 | 4.23343 | 3.62147 | 0.61196 | 6.97771 | 5.96905 | 1.00866 | 13.6283 | 11.6583 | 1.9700 |
| 2006 | 2.14228 | 1.81076 | 0.33152 | 2.04290 | 1.72675 | 0.31614 | 5.61253 | 4.74398 | 0.86855 | 4.28780 | 3.62425 | 0.66355 | 7.06732 | 5.97363 | 1.09369 | 13.8034 | 11.6673 | 2.1361 |
| 2007 | 2.17213 | 1.81225 | 0.35988 | 2.07136 | 1.72817 | 0.34318 | 5.69073 | 4.74788 | 0.94284 | 4.34753 | 3.62723 | 0.72030 | 7.16578 | 5.97855 | 1.18723 | 13.9957 | 11.6768 | 2.3188 |
| 2008 | 2.20500 | 1.81384 | 0.39115 | 2.10270 | 1.72970 | 0.37301 | 5.77684 | 4.75206 | 1.02478 | 4.41332 | 3.63042 | 0.78290 | 7.27422 | 5.98381 | 1.29040 | 14.2075 | 11.6871 | 2.5203 |
| 2009 | 2.24268 | 1.81555 | 0.42713 | 2.13864 | 1.73133 | 0.40731 | 5.87557 | 4.75654 | 1.11902 | 4.48875 | 3.63385 | 0.85490 | 7.39853 | 5.98945 | 1.40908 | 14.4503 | 11.6982 | 2.7521 |
| 2010 | 2.30324 | 1.81739 | 0.48585 | 2.19639 | 1.73308 | 0.46331 | 6.03423 | 4.76135 | 1.27288 | 4.60996 | 3.63752 | 0.97244 | 7.59831 | 5.99551 | 1.60281 | 14.8405 | 11.7100 | 3.1305 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.18 y A. 5.23

Cuadro N° A.5.29
PROYECTO AMPLIACIÓN A UN 3^{er} CARRIL VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 7%. TRAMO 4

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.23602 | 1.08340 | 0.15263 | 1.17868 | 1.03314 | 0.14554 | 3.23824 | 2.83838 | 0.39986 | 2.47391 | 2.16843 | 0.30548 | 4.07760 | 3.57409 | 0.50351 | 7.9641 | 6.9806 | 0.9834 |
| 1996 | 1.24626 | 1.08407 | 0.16219 | 1.18845 | 1.03378 | 0.15467 | 3.26506 | 2.84014 | 0.42492 | 2.49440 | 2.16978 | 0.32463 | 4.11138 | 3.57632 | 0.53506 | 8.0300 | 6.9850 | 1.0450 |
| 1997 | 1.25741 | 1.08479 | 0.17261 | 1.19907 | 1.03447 | 0.16461 | 3.29427 | 2.84204 | 0.45223 | 2.51671 | 2.17123 | 0.34549 | 4.14815 | 3.57870 | 0.56945 | 8.1019 | 6.9897 | 1.1122 |
| 1998 | 1.26956 | 1.08557 | 0.18399 | 1.21066 | 1.03521 | 0.17545 | 3.32610 | 2.84407 | 0.48203 | 2.54103 | 2.17278 | 0.36825 | 4.18823 | 3.58126 | 0.60697 | 8.1801 | 6.9946 | 1.1855 |
| 1999 | 1.28908 | 1.08640 | 0.20268 | 1.22927 | 1.03600 | 0.19328 | 3.37724 | 2.84624 | 0.53100 | 2.58010 | 2.17444 | 0.40566 | 4.25263 | 3.58399 | 0.66863 | 8.3059 | 7.0000 | 1.3059 |
| 2000 | 1.30508 | 1.08729 | 0.21779 | 1.24453 | 1.03685 | 0.20769 | 3.41915 | 2.84857 | 0.57058 | 2.61212 | 2.17622 | 0.43591 | 4.30541 | 3.58693 | 0.71848 | 8.4090 | 7.0057 | 1.4033 |
| 2001 | 1.32264 | 1.08824 | 0.23440 | 1.26128 | 1.03776 | 0.22353 | 3.46517 | 2.85107 | 0.61410 | 2.64728 | 2.17812 | 0.46916 | 4.36335 | 3.59007 | 0.77328 | 8.5222 | 7.0119 | 1.5103 |
| 2002 | 1.34197 | 1.08926 | 0.25270 | 1.27971 | 1.03873 | 0.24098 | 3.51580 | 2.85374 | 0.66206 | 2.68596 | 2.18017 | 0.50579 | 4.42711 | 3.59344 | 0.83366 | 8.6467 | 7.0184 | 1.6283 |
| 2003 | 1.36328 | 1.09036 | 0.27292 | 1.30004 | 1.03977 | 0.26026 | 3.57164 | 2.85662 | 0.71503 | 2.72862 | 2.18236 | 0.54626 | 4.49742 | 3.59706 | 0.90037 | 8.7840 | 7.0255 | 1.7585 |
| 2004 | 1.38685 | 1.09153 | 0.29532 | 1.32251 | 1.04089 | 0.28162 | 3.63339 | 2.85969 | 0.77370 | 2.77579 | 2.18471 | 0.59108 | 4.57518 | 3.60093 | 0.97424 | 8.9359 | 7.0331 | 1.9028 |
| 2005 | 1.41299 | 1.09279 | 0.32020 | 1.34744 | 1.04210 | 0.30534 | 3.70187 | 2.86299 | 0.83888 | 2.82811 | 2.18723 | 0.64087 | 4.66140 | 3.60509 | 1.05632 | 9.1043 | 7.0412 | 2.0631 |
| 2006 | 1.44207 | 1.09414 | 0.34793 | 1.37517 | 1.04338 | 0.33178 | 3.77806 | 2.86653 | 0.91153 | 2.88632 | 2.18994 | 0.69638 | 4.75734 | 3.60955 | 1.14780 | 9.2917 | 7.0499 | 2.2418 |
| 2007 | 1.47454 | 1.09559 | 0.37895 | 1.40614 | 1.04477 | 0.36137 | 3.86313 | 2.87033 | 0.99280 | 2.95131 | 2.19284 | 0.75847 | 4.86447 | 3.61433 | 1.25014 | 9.5009 | 7.0592 | 2.4417 |
| 2008 | 1.62950 | 1.09715 | 0.53235 | 1.55390 | 1.04625 | 0.50765 | 4.26910 | 2.87440 | 1.39470 | 3.26146 | 2.19595 | 1.06550 | 5.37566 | 3.61946 | 1.75620 | 10.4993 | 7.0693 | 3.4301 |
| 2009 | 1.70641 | 1.09882 | 0.60759 | 1.62725 | 1.04784 | 0.57941 | 4.47060 | 2.87878 | 1.59183 | 3.41540 | 2.19929 | 1.21611 | 5.62940 | 3.62496 | 2.00444 | 10.9949 | 7.0800 | 3.9149 |
| 2010 | 1.79718 | 1.10061 | 0.69657 | 1.71380 | 1.04955 | 0.66425 | 4.70840 | 2.88347 | 1.82493 | 3.59707 | 2.20288 | 1.39419 | 5.92883 | 3.63087 | 2.29796 | 11.5798 | 7.0915 | 4.4882 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.19 y A. 5.24

Cuadro N° A.5.30
PROYECTO AMPLIACIÓN A UN 3^{er} CARRIL VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 7%. TRAMO 5

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 0.37864 | 0.35987 | 0.01877 | 0.36107 | 0.34318 | 0.01789 | 0.99199 | 0.94283 | 0.04916 | 0.75785 | 0.72029 | 0.03756 | 1.24912 | 1.18721 | 0.06191 | 2.4397 | 2.3188 | 0.1209 |
| 1996 | 0.38117 | 0.36001 | 0.02117 | 0.36349 | 0.34331 | 0.02018 | 0.99863 | 0.94318 | 0.05545 | 0.76292 | 0.72056 | 0.04236 | 1.25748 | 1.18766 | 0.06982 | 2.4560 | 2.3196 | 0.1364 |
| 1997 | 0.38392 | 0.36015 | 0.02377 | 0.36611 | 0.34344 | 0.02267 | 1.00584 | 0.94356 | 0.06228 | 0.76843 | 0.72085 | 0.04758 | 1.26655 | 1.18813 | 0.07842 | 2.4737 | 2.3206 | 0.1532 |
| 1998 | 0.38691 | 0.36031 | 0.02660 | 0.36896 | 0.34359 | 0.02537 | 1.01366 | 0.94397 | 0.06970 | 0.77441 | 0.72116 | 0.05325 | 1.27641 | 1.18865 | 0.08776 | 2.4930 | 2.3216 | 0.1714 |
| 1999 | 0.39016 | 0.36047 | 0.02969 | 0.37206 | 0.34375 | 0.02831 | 1.02218 | 0.94440 | 0.07777 | 0.78091 | 0.72149 | 0.05942 | 1.28713 | 1.18919 | 0.09793 | 2.5139 | 2.3226 | 0.1913 |
| 2000 | 0.39370 | 0.36065 | 0.03304 | 0.37543 | 0.34392 | 0.03151 | 1.03144 | 0.94487 | 0.08657 | 0.78799 | 0.72185 | 0.06614 | 1.29879 | 1.18978 | 0.10901 | 2.5367 | 2.3238 | 0.2129 |
| 2001 | 0.39755 | 0.36084 | 0.03671 | 0.37911 | 0.34410 | 0.03501 | 1.04154 | 0.94537 | 0.09618 | 0.79571 | 0.72223 | 0.07347 | 1.31152 | 1.19041 | 0.12110 | 2.5616 | 2.3250 | 0.2365 |
| 2002 | 0.40176 | 0.36105 | 0.04072 | 0.38313 | 0.34430 | 0.03883 | 1.05258 | 0.94590 | 0.10667 | 0.80413 | 0.72264 | 0.08149 | 1.32541 | 1.19109 | 0.13432 | 2.5887 | 2.3263 | 0.2623 |
| 2003 | 0.40633 | 0.36127 | 0.04506 | 0.38748 | 0.34451 | 0.04297 | 1.06453 | 0.94648 | 0.11805 | 0.81327 | 0.72308 | 0.09019 | 1.34046 | 1.19181 | 0.14865 | 2.6181 | 2.3277 | 0.2903 |
| 2004 | 0.41069 | 0.36150 | 0.04919 | 0.39164 | 0.34473 | 0.04691 | 1.07597 | 0.94709 | 0.12888 | 0.82201 | 0.72355 | 0.09846 | 1.35487 | 1.19258 | 0.16229 | 2.6462 | 2.3293 | 0.3170 |
| 2005 | 0.41547 | 0.36175 | 0.05372 | 0.39620 | 0.34497 | 0.05123 | 1.08850 | 0.94775 | 0.14075 | 0.83158 | 0.72405 | 0.10753 | 1.37064 | 1.19341 | 0.17723 | 2.6770 | 2.3309 | 0.3461 |
| 2006 | 0.42071 | 0.36202 | 0.05869 | 0.40120 | 0.34523 | 0.05597 | 1.10222 | 0.94846 | 0.15377 | 0.84206 | 0.72459 | 0.11747 | 1.38792 | 1.19430 | 0.19362 | 2.7108 | 2.3326 | 0.3782 |
| 2007 | 0.42647 | 0.36231 | 0.06416 | 0.40668 | 0.34550 | 0.06118 | 1.11730 | 0.94921 | 0.16808 | 0.85358 | 0.72517 | 0.12841 | 1.40690 | 1.19525 | 0.21165 | 2.7479 | 2.3345 | 0.4134 |
| 2008 | 0.43280 | 0.36262 | 0.07018 | 0.41272 | 0.34580 | 0.06693 | 1.13389 | 0.95002 | 0.18387 | 0.86625 | 0.72579 | 0.14047 | 1.42780 | 1.19627 | 0.23153 | 2.7887 | 2.3365 | 0.4522 |
| 2009 | 0.43979 | 0.36295 | 0.07684 | 0.41939 | 0.34611 | 0.07327 | 1.15220 | 0.95089 | 0.20131 | 0.88024 | 0.72645 | 0.15379 | 1.45085 | 1.19736 | 0.25349 | 2.8337 | 2.3386 | 0.4951 |
| 2010 | 0.44752 | 0.36331 | 0.08422 | 0.42676 | 0.34645 | 0.08031 | 1.17246 | 0.95182 | 0.22064 | 0.89572 | 0.72716 | 0.16856 | 1.47636 | 1.19853 | 0.27782 | 2.8835 | 2.3409 | 0.5426 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.20 y A. 5.25

Cuadro N° A.5.31
**COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 10%, TRAMO
1. SITUACIÓN SIN PROYECTO
(km 21-42)**

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobús | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobús | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobús | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 91.04 | 78.07 | 75.35 | 0.23066 | 0.26900 | 0.27871 | 2.68486 | 2.56031 | 8.85729 | 7.03404 | 5.37378 | 17.29939 | 26.51029 |
| 1996 | 90.03 | 77.20 | 74.51 | 0.23326 | 0.27203 | 0.28185 | 2.71514 | 2.58918 | 8.95715 | 7.11335 | 5.43437 | 17.49443 | 26.80917 |
| 1997 | 88.91 | 76.24 | 73.58 | 0.23619 | 0.27545 | 0.28539 | 2.74923 | 2.62169 | 9.06963 | 7.20267 | 5.50261 | 17.71411 | 27.14583 |
| 1998 | 87.68 | 75.19 | 72.57 | 0.23950 | 0.27931 | 0.28939 | 2.78774 | 2.65841 | 9.19666 | 7.30356 | 5.57969 | 17.96223 | 27.52605 |
| 1999 | 86.33 | 74.03 | 71.45 | 0.24324 | 0.28368 | 0.29392 | 2.83136 | 2.70001 | 9.34058 | 7.41785 | 5.66700 | 18.24331 | 27.95680 |
| 2000 | 85.01 | 72.90 | 70.36 | 0.24702 | 0.28808 | 0.29848 | 2.87531 | 2.74192 | 9.48556 | 7.53299 | 5.75496 | 18.52649 | 28.39075 |
| 2001 | 83.61 | 71.70 | 69.20 | 0.25115 | 0.29290 | 0.30348 | 2.92341 | 2.78779 | 9.64423 | 7.65900 | 5.85123 | 18.83639 | 28.86565 |
| 2002 | 82.08 | 70.38 | 67.93 | 0.25586 | 0.29839 | 0.30916 | 2.97821 | 2.84004 | 9.82501 | 7.80257 | 5.96091 | 19.18948 | 29.40674 |
| 2003 | 80.38 | 68.93 | 66.52 | 0.26125 | 0.30467 | 0.31567 | 3.04091 | 2.89984 | 10.03187 | 7.96684 | 6.08641 | 19.59349 | 30.02586 |
| 2004 | 78.52 | 67.33 | 64.98 | 0.26744 | 0.31189 | 0.32316 | 3.11300 | 2.96859 | 10.26970 | 8.15572 | 6.23071 | 20.05801 | 30.73772 |
| 2005 | 75.95 | 65.12 | 62.85 | 0.27651 | 0.32248 | 0.33412 | 3.21863 | 3.06931 | 10.61815 | 8.43244 | 6.44211 | 20.73858 | 31.78064 |
| 2006 | 72.91 | 62.52 | 60.34 | 0.28802 | 0.33589 | 0.34802 | 3.35255 | 3.19702 | 11.05995 | 8.78330 | 6.71016 | 21.60147 | 33.10298 |
| 2007 | 69.57 | 59.66 | 57.58 | 0.30183 | 0.35201 | 0.36472 | 3.51335 | 3.35036 | 11.59044 | 9.20458 | 7.03201 | 22.63757 | 34.69074 |
| 2008 | 65.90 | 56.51 | 54.54 | 0.31865 | 0.37161 | 0.38503 | 3.70904 | 3.53697 | 12.23602 | 9.71727 | 7.42369 | 23.89847 | 36.62299 |
| 2009 | 64.00 | 54.88 | 52.97 | 0.32813 | 0.38267 | 0.39648 | 3.81938 | 3.64219 | 12.60000 | 10.00633 | 7.64452 | 24.60938 | 37.71241 |
| 2010 | 62.72 | 53.78 | 51.91 | 0.33481 | 0.39046 | 0.40456 | 3.89717 | 3.71638 | 12.85665 | 10.21015 | 7.80023 | 25.11065 | 38.48058 |

FUENTE: Elaboración propia

Cuadro N° A.5.32
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 10%, TRAMO
2. SITUACIÓN SIN PROYECTO
(km 42-88)

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobús | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobús | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobús | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 90.25 | 77.39 | 74.69 | 0.50969 | 0.59441 | 0.61587 | 5.93277 | 5.65754 | 19.57203 | 15.54319 | 11.87450 | 38.22663 | 58.58004 |
| 1996 | 89.67 | 76.89 | 74.21 | 0.51301 | 0.59828 | 0.61988 | 5.97141 | 5.69439 | 19.69951 | 15.64443 | 11.95184 | 38.47560 | 58.96157 |
| 1997 | 89.02 | 76.34 | 73.68 | 0.51671 | 0.60260 | 0.62436 | 6.01450 | 5.73548 | 19.84166 | 15.75731 | 12.03808 | 38.75323 | 59.38704 |
| 1998 | 88.32 | 75.73 | 73.09 | 0.52084 | 0.60742 | 0.62935 | 6.06262 | 5.78137 | 20.00041 | 15.88339 | 12.13440 | 39.06330 | 59.86220 |
| 1999 | 87.54 | 75.06 | 72.45 | 0.52547 | 0.61281 | 0.63494 | 6.11646 | 5.83270 | 20.17800 | 16.02442 | 12.24215 | 39.41016 | 60.39373 |
| 2000 | 86.69 | 74.33 | 71.74 | 0.53065 | 0.61886 | 0.64120 | 6.17679 | 5.89023 | 20.37703 | 16.18248 | 12.36290 | 39.79888 | 60.98943 |
| 2001 | 85.71 | 73.49 | 70.93 | 0.53670 | 0.62590 | 0.64851 | 6.24713 | 5.95731 | 20.60909 | 16.36677 | 12.50369 | 40.25213 | 61.68400 |
| 2002 | 84.53 | 72.48 | 69.96 | 0.54418 | 0.63463 | 0.65755 | 6.33426 | 6.04041 | 20.89654 | 16.59506 | 12.67809 | 40.81356 | 62.54436 |
| 2003 | 83.23 | 71.37 | 68.88 | 0.55266 | 0.64452 | 0.66780 | 6.43296 | 6.13453 | 21.22215 | 16.85364 | 12.87564 | 41.44951 | 63.51891 |
| 2004 | 81.81 | 70.15 | 67.70 | 0.56230 | 0.65576 | 0.67944 | 6.54515 | 6.24151 | 21.59224 | 17.14754 | 13.10017 | 42.17234 | 64.62660 |
| 2005 | 80.24 | 68.80 | 66.40 | 0.57330 | 0.66859 | 0.69273 | 6.67316 | 6.36358 | 22.01453 | 17.48291 | 13.35639 | 42.99714 | 65.89056 |
| 2006 | 78.51 | 67.32 | 64.98 | 0.58590 | 0.68329 | 0.70796 | 6.81988 | 6.50349 | 22.49856 | 17.86730 | 13.65005 | 43.94250 | 67.33928 |
| 2007 | 75.93 | 65.11 | 62.84 | 0.60584 | 0.70655 | 0.73206 | 7.05201 | 6.72485 | 23.26435 | 18.47546 | 14.11466 | 45.43819 | 69.63133 |
| 2008 | 72.81 | 62.43 | 60.25 | 0.63181 | 0.73683 | 0.76344 | 7.35430 | 7.01313 | 24.26162 | 19.26744 | 14.71971 | 47.38598 | 72.61621 |
| 2009 | 69.37 | 59.49 | 57.41 | 0.66308 | 0.77330 | 0.80122 | 7.71825 | 7.36018 | 25.46226 | 20.22093 | 15.44815 | 49.73097 | 76.20977 |
| 2010 | 65.60 | 56.25 | 54.29 | 0.70125 | 0.81782 | 0.84735 | 8.16258 | 7.78391 | 26.92811 | 21.38504 | 16.33749 | 52.59397 | 80.59714 |

FUENTE: Elaboración propia

Cuadro N°A.5.33

**COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 10%, TRAMO
3. SITUACIÓN SIN PROYECTO
(km 88-103)**

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobús | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobús | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobús | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 89.41 | 76.66 | 73.99 | 0.16777 | 0.19566 | 0.20273 | 1.95289 | 1.86229 | 6.44253 | 5.11635 | 3.90873 | 12.58306 | 19.28279 |
| 1996 | 88.74 | 76.09 | 73.44 | 0.16903 | 0.19713 | 0.20424 | 1.96750 | 1.87622 | 6.49072 | 5.15463 | 3.93797 | 12.67719 | 19.42704 |
| 1997 | 88.01 | 75.47 | 72.84 | 0.17043 | 0.19876 | 0.20594 | 1.98382 | 1.89179 | 6.54458 | 5.19740 | 3.97064 | 12.78238 | 19.58823 |
| 1998 | 87.21 | 74.78 | 72.17 | 0.17200 | 0.20059 | 0.20784 | 2.00210 | 1.90922 | 6.60486 | 5.24527 | 4.00722 | 12.90011 | 19.76866 |
| 1999 | 86.32 | 74.02 | 71.44 | 0.17376 | 0.20264 | 0.20996 | 2.02259 | 1.92876 | 6.67246 | 5.29896 | 4.04824 | 13.03216 | 19.97101 |
| 2000 | 85.26 | 73.11 | 70.56 | 0.17593 | 0.20518 | 0.21259 | 2.04787 | 1.95287 | 6.75587 | 5.36519 | 4.09884 | 13.19506 | 20.22064 |
| 2001 | 84.04 | 72.06 | 69.55 | 0.17850 | 0.20817 | 0.21568 | 2.07770 | 1.98131 | 6.85428 | 5.44335 | 4.15854 | 13.38726 | 20.51518 |
| 2002 | 82.69 | 70.90 | 68.43 | 0.18140 | 0.21156 | 0.21920 | 2.11154 | 2.01358 | 6.96589 | 5.53198 | 4.22626 | 13.60526 | 20.84925 |
| 2003 | 81.21 | 69.63 | 67.21 | 0.18471 | 0.21541 | 0.22319 | 2.15005 | 2.05030 | 7.09294 | 5.63288 | 4.30334 | 13.85340 | 21.22951 |
| 2004 | 79.58 | 68.24 | 65.86 | 0.18849 | 0.21983 | 0.22776 | 2.19407 | 2.09228 | 7.23816 | 5.74821 | 4.39145 | 14.13703 | 21.66416 |
| 2005 | 77.68 | 66.61 | 64.29 | 0.19310 | 0.22519 | 0.23333 | 2.24766 | 2.14339 | 7.41496 | 5.88861 | 4.49871 | 14.48234 | 22.19333 |
| 2006 | 74.74 | 64.09 | 61.85 | 0.20070 | 0.23406 | 0.24251 | 2.33612 | 2.22774 | 7.70679 | 6.12037 | 4.67577 | 15.05233 | 23.06680 |
| 2007 | 71.50 | 61.31 | 59.18 | 0.20978 | 0.24465 | 0.25348 | 2.44184 | 2.32855 | 8.05554 | 6.39733 | 4.88736 | 15.73347 | 24.11061 |
| 2008 | 67.94 | 58.26 | 56.23 | 0.22077 | 0.25747 | 0.26676 | 2.56975 | 2.45053 | 8.47752 | 6.73245 | 5.14338 | 16.55767 | 25.37364 |
| 2009 | 64.03 | 54.90 | 52.99 | 0.23427 | 0.27321 | 0.28307 | 2.72688 | 2.60038 | 8.99590 | 7.14412 | 5.45788 | 17.57011 | 26.92515 |
| 2010 | 64.00 | 54.88 | 52.97 | 0.23438 | 0.27333 | 0.28320 | 2.72813 | 2.60156 | 9.00000 | 7.14738 | 5.46037 | 17.57813 | 26.93743 |

FUENTE: Elaboración propia

Cuadro N° A.5.34
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 10%, TRAMO
4. SITUACIÓN SIN PROYECTO
(km 103-112)

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobús | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobús | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobús | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 87.74 | 75.23 | 72.61 | 0.10258 | 0.11963 | 0.12395 | 1.19398 | 1.13859 | 3.93890 | 3.12809 | 2.38976 | 7.69316 | 11.78931 |
| 1996 | 87.04 | 74.64 | 72.04 | 0.10340 | 0.12058 | 0.12494 | 1.20353 | 1.14770 | 3.97041 | 3.15311 | 2.40888 | 7.75471 | 11.88363 |
| 1997 | 86.28 | 73.98 | 71.40 | 0.10431 | 0.12165 | 0.12605 | 1.21422 | 1.15789 | 4.00566 | 3.18111 | 2.43026 | 7.82356 | 11.98914 |
| 1998 | 85.38 | 73.21 | 70.66 | 0.10541 | 0.12293 | 0.12737 | 1.22693 | 1.17001 | 4.04761 | 3.21443 | 2.45572 | 7.90550 | 12.11470 |
| 1999 | 84.37 | 72.35 | 69.83 | 0.10667 | 0.12440 | 0.12889 | 1.24164 | 1.18404 | 4.09615 | 3.25297 | 2.48516 | 8.00028 | 12.25996 |
| 2000 | 83.26 | 71.39 | 68.90 | 0.10810 | 0.12606 | 0.13062 | 1.25824 | 1.19987 | 4.15089 | 3.29644 | 2.51838 | 8.10721 | 12.42382 |
| 2001 | 82.04 | 70.34 | 67.89 | 0.10971 | 0.12794 | 0.13257 | 1.27701 | 1.21777 | 4.21283 | 3.34563 | 2.55596 | 8.22818 | 12.60920 |
| 2002 | 80.69 | 69.19 | 66.78 | 0.11154 | 0.13008 | 0.13478 | 1.29832 | 1.23809 | 4.28313 | 3.40146 | 2.59861 | 8.36549 | 12.81962 |
| 2003 | 79.21 | 67.92 | 65.55 | 0.11363 | 0.13251 | 0.13730 | 1.32260 | 1.26124 | 4.36322 | 3.46507 | 2.64720 | 8.52192 | 13.05934 |
| 2004 | 77.33 | 66.31 | 64.00 | 0.11638 | 0.13572 | 0.14063 | 1.35467 | 1.29182 | 4.46900 | 3.54907 | 2.71138 | 8.72851 | 13.37593 |
| 2005 | 74.50 | 63.88 | 61.65 | 0.12081 | 0.14089 | 0.14598 | 1.40622 | 1.34099 | 4.63909 | 3.68415 | 2.81457 | 9.06072 | 13.88501 |
| 2006 | 71.38 | 61.21 | 59.07 | 0.12609 | 0.14705 | 0.15236 | 1.46767 | 1.39958 | 4.84179 | 3.84513 | 2.93755 | 9.45663 | 14.49172 |
| 2007 | 67.95 | 58.26 | 56.23 | 0.13245 | 0.15447 | 0.16005 | 1.54177 | 1.47025 | 5.08626 | 4.03927 | 3.08587 | 9.93410 | 15.22343 |
| 2008 | 64.17 | 55.03 | 53.11 | 0.14024 | 0.16356 | 0.16946 | 1.63244 | 1.55671 | 5.38537 | 4.27681 | 3.26734 | 10.51830 | 16.11866 |
| 2009 | 64.00 | 54.88 | 52.97 | 0.14063 | 0.16400 | 0.16992 | 1.63688 | 1.56094 | 5.40000 | 4.28843 | 3.27622 | 10.54688 | 16.16246 |
| 2010 | 64.00 | 54.88 | 52.97 | 0.14063 | 0.16400 | 0.16992 | 1.63688 | 1.56094 | 5.40000 | 4.28843 | 3.27622 | 10.54688 | 16.16246 |

FUENTE: Elaboración propia

Cuadro N° A.5.35
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 10%, TRAMO
5. SITUACIÓN SIN PROYECTO
(km 112-115)

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobús | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobús | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobús | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 92.23 | 79.08 | 76.32 | 0.03253 | 0.03794 | 0.03931 | 0.37864 | 0.36107 | 1.24912 | 0.99199 | 0.75785 | 2.43968 | 3.73866 |
| 1996 | 91.35 | 78.33 | 75.60 | 0.03284 | 0.03830 | 0.03968 | 0.38227 | 0.36454 | 1.26110 | 1.00151 | 0.76512 | 2.46308 | 3.77453 |
| 1997 | 90.38 | 77.50 | 74.80 | 0.03319 | 0.03871 | 0.04011 | 0.38635 | 0.36842 | 1.27455 | 1.01219 | 0.77328 | 2.48935 | 3.81478 |
| 1998 | 89.32 | 76.59 | 73.92 | 0.03359 | 0.03917 | 0.04058 | 0.39093 | 0.37280 | 1.28968 | 1.02420 | 0.78246 | 2.51890 | 3.86007 |
| 1999 | 88.16 | 75.59 | 72.96 | 0.03403 | 0.03969 | 0.04112 | 0.39611 | 0.37773 | 1.30674 | 1.03775 | 0.79281 | 2.55223 | 3.91114 |
| 2000 | 86.88 | 74.49 | 71.90 | 0.03453 | 0.04027 | 0.04173 | 0.40196 | 0.38331 | 1.32604 | 1.05308 | 0.80452 | 2.58992 | 3.96890 |
| 2001 | 85.54 | 73.34 | 70.79 | 0.03507 | 0.04090 | 0.04238 | 0.40825 | 0.38931 | 1.34682 | 1.06958 | 0.81712 | 2.63050 | 4.03108 |
| 2002 | 84.19 | 72.19 | 69.67 | 0.03563 | 0.04156 | 0.04306 | 0.41478 | 0.39554 | 1.36836 | 1.08668 | 0.83019 | 2.67257 | 4.09555 |
| 2003 | 82.71 | 70.92 | 68.45 | 0.03627 | 0.04230 | 0.04383 | 0.42221 | 0.40262 | 1.39286 | 1.10614 | 0.84506 | 2.72043 | 4.16890 |
| 2004 | 81.08 | 69.52 | 67.10 | 0.03700 | 0.04315 | 0.04471 | 0.43070 | 0.41071 | 1.42085 | 1.12837 | 0.86204 | 2.77510 | 4.25267 |
| 2005 | 79.29 | 67.99 | 65.62 | 0.03784 | 0.04413 | 0.04572 | 0.44043 | 0.42000 | 1.45297 | 1.15388 | 0.88153 | 2.83782 | 4.34880 |
| 2006 | 77.08 | 66.09 | 63.79 | 0.03892 | 0.04539 | 0.04703 | 0.45304 | 0.43202 | 1.49457 | 1.18692 | 0.90677 | 2.91909 | 4.47333 |
| 2007 | 74.16 | 63.59 | 61.38 | 0.04045 | 0.04717 | 0.04888 | 0.47085 | 0.44900 | 1.55331 | 1.23356 | 0.94240 | 3.03381 | 4.64913 |
| 2008 | 70.96 | 60.84 | 58.72 | 0.04228 | 0.04931 | 0.05109 | 0.49212 | 0.46929 | 1.62349 | 1.28930 | 0.98498 | 3.17088 | 4.85919 |
| 2009 | 67.43 | 57.82 | 55.81 | 0.04449 | 0.05188 | 0.05376 | 0.51786 | 0.49383 | 1.70840 | 1.35673 | 1.03650 | 3.33672 | 5.11332 |
| 2010 | 63.55 | 54.49 | 52.59 | 0.04721 | 0.05505 | 0.05704 | 0.54947 | 0.52398 | 1.81268 | 1.43955 | 1.09977 | 3.54040 | 5.42545 |

FUENTE: Elaboración propia

Cuadro N° A.5.36
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 10%, TRAMO
1. SITUACIÓN CON PROYECTO
(km 21-42)

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobús | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobús | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobús | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 96.32 | 82.59 | 79.71 | 0.21803 | 0.25427 | 0.26346 | 2.53790 | 2.42016 | 8.37245 | 6.64901 | 5.07963 | 16.35245 | 25.05916 |
| 1996 | 96.19 | 82.48 | 79.61 | 0.21831 | 0.25460 | 0.26380 | 2.54117 | 2.42328 | 8.38324 | 6.65758 | 5.08618 | 16.37352 | 25.09146 |
| 1997 | 96.06 | 82.36 | 79.49 | 0.21862 | 0.25496 | 0.26417 | 2.54478 | 2.42672 | 8.39515 | 6.66703 | 5.09340 | 16.39677 | 25.12708 |
| 1998 | 95.91 | 82.24 | 79.37 | 0.21897 | 0.25536 | 0.26458 | 2.54876 | 2.43052 | 8.40828 | 6.67746 | 5.10137 | 16.42242 | 25.16638 |
| 1999 | 95.74 | 82.09 | 79.23 | 0.21934 | 0.25580 | 0.26504 | 2.55315 | 2.43471 | 8.42277 | 6.68897 | 5.11016 | 16.45072 | 25.20975 |
| 2000 | 95.56 | 81.94 | 79.08 | 0.21976 | 0.25629 | 0.26554 | 2.55800 | 2.43933 | 8.43877 | 6.70167 | 5.11986 | 16.48197 | 25.25763 |
| 2001 | 95.36 | 81.77 | 78.92 | 0.22022 | 0.25682 | 0.26610 | 2.56336 | 2.44444 | 8.45643 | 6.71570 | 5.13058 | 16.51647 | 25.31052 |
| 2002 | 95.14 | 81.58 | 78.74 | 0.22073 | 0.25742 | 0.26671 | 2.56927 | 2.45008 | 8.47596 | 6.73121 | 5.14243 | 16.55460 | 25.36894 |
| 2003 | 94.90 | 81.37 | 78.54 | 0.22129 | 0.25807 | 0.26739 | 2.57581 | 2.45632 | 8.49753 | 6.74834 | 5.15552 | 16.59674 | 25.43353 |
| 2004 | 94.63 | 81.14 | 78.32 | 0.22191 | 0.25880 | 0.26814 | 2.58305 | 2.46322 | 8.52140 | 6.76729 | 5.17000 | 16.64335 | 25.50495 |
| 2005 | 94.34 | 80.89 | 78.07 | 0.22260 | 0.25960 | 0.26897 | 2.59105 | 2.47085 | 8.54780 | 6.78826 | 5.18601 | 16.69492 | 25.58398 |
| 2006 | 94.02 | 80.62 | 77.81 | 0.22336 | 0.26049 | 0.26989 | 2.59991 | 2.47930 | 8.57703 | 6.81148 | 5.20375 | 16.75202 | 25.67147 |
| 2007 | 93.66 | 80.31 | 77.52 | 0.22420 | 0.26147 | 0.27091 | 2.60973 | 2.48866 | 8.60942 | 6.83720 | 5.22340 | 16.81528 | 25.76842 |
| 2008 | 93.28 | 79.98 | 77.19 | 0.22514 | 0.26256 | 0.27204 | 2.62062 | 2.49904 | 8.64533 | 6.86572 | 5.24519 | 16.88542 | 25.87590 |
| 2009 | 92.85 | 79.61 | 76.84 | 0.22618 | 0.26377 | 0.27330 | 2.63270 | 2.51056 | 8.68518 | 6.89737 | 5.26937 | 16.96325 | 25.99518 |
| 2010 | 92.38 | 79.21 | 76.45 | 0.22733 | 0.26512 | 0.27469 | 2.64611 | 2.52336 | 8.72945 | 6.93252 | 5.29622 | 17.04970 | 26.12766 |

FUENTE: Elaboración propia

Cuadro N° A.5.37

**COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 10%, TRAMO
2. SITUACIÓN CON PROYECTO
(km 42-88)**

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobús | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobús | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobús | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 96.59 | 82.83 | 79.94 | 0.47622 | 0.55537 | 0.57543 | 5.54316 | 5.28600 | 18.28671 | 14.52245 | 11.09469 | 35.71623 | 54.73301 |
| 1996 | 96.50 | 82.74 | 79.86 | 0.47669 | 0.55593 | 0.57600 | 5.54868 | 5.29127 | 18.30492 | 14.53691 | 11.10573 | 35.75179 | 54.78751 |
| 1997 | 96.39 | 82.65 | 79.77 | 0.47721 | 0.55654 | 0.57663 | 5.55476 | 5.29707 | 18.32499 | 14.55285 | 11.11791 | 35.79099 | 54.84758 |
| 1998 | 96.28 | 82.55 | 79.68 | 0.47779 | 0.55721 | 0.57733 | 5.56147 | 5.30346 | 18.34712 | 14.57042 | 11.13134 | 35.83421 | 54.91381 |
| 1999 | 96.15 | 82.44 | 79.57 | 0.47843 | 0.55795 | 0.57810 | 5.56887 | 5.31052 | 18.37152 | 14.58980 | 11.14614 | 35.88188 | 54.98685 |
| 2000 | 96.01 | 82.32 | 79.46 | 0.47913 | 0.55877 | 0.57894 | 5.57703 | 5.31830 | 18.39844 | 14.61118 | 11.16247 | 35.93445 | 55.06742 |
| 2001 | 95.85 | 82.19 | 79.33 | 0.47990 | 0.55967 | 0.57988 | 5.58603 | 5.32688 | 18.42814 | 14.63477 | 11.18049 | 35.99246 | 55.15631 |
| 2002 | 95.68 | 82.05 | 79.19 | 0.48075 | 0.56066 | 0.58091 | 5.59597 | 5.33636 | 18.46092 | 14.66080 | 11.20038 | 36.05649 | 55.25443 |
| 2003 | 95.50 | 81.89 | 79.03 | 0.48170 | 0.56176 | 0.58205 | 5.60694 | 5.34682 | 18.49712 | 14.68955 | 11.22234 | 36.12718 | 55.36277 |
| 2004 | 95.29 | 81.71 | 78.86 | 0.48274 | 0.56298 | 0.58331 | 5.61906 | 5.35838 | 18.53710 | 14.72130 | 11.24660 | 36.20527 | 55.48243 |
| 2005 | 95.06 | 81.51 | 78.67 | 0.48389 | 0.56432 | 0.58470 | 5.63245 | 5.37115 | 18.58128 | 14.75638 | 11.27340 | 36.29155 | 55.61466 |
| 2006 | 94.81 | 81.30 | 78.47 | 0.48516 | 0.56580 | 0.58623 | 5.64725 | 5.38527 | 18.63012 | 14.79517 | 11.30303 | 36.38694 | 55.76084 |
| 2007 | 94.54 | 81.07 | 78.24 | 0.48657 | 0.56744 | 0.58793 | 5.66363 | 5.40088 | 18.68414 | 14.83807 | 11.33581 | 36.49245 | 55.92252 |
| 2008 | 94.24 | 80.81 | 77.99 | 0.48812 | 0.56926 | 0.58982 | 5.68175 | 5.41816 | 18.74392 | 14.88555 | 11.37208 | 36.60922 | 56.10146 |
| 2009 | 93.91 | 80.52 | 77.72 | 0.48985 | 0.57127 | 0.59190 | 5.70182 | 5.43730 | 18.81013 | 14.93812 | 11.41225 | 36.73853 | 56.29963 |
| 2010 | 93.54 | 80.21 | 77.41 | 0.49176 | 0.57350 | 0.59421 | 5.72406 | 5.45851 | 18.88350 | 14.99639 | 11.45676 | 36.88184 | 56.51923 |

FUENTE: Elaboración propia

Cuadro N° A.5.38

**COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 10%, TRAMO
3. SITUACIÓN CON PROYECTO
(km 88-103)**

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobús | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobús | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobús | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 96.43 | 82.69 | 79.81 | 0.15555 | 0.18140 | 0.18796 | 1.81060 | 1.72660 | 5.97310 | 4.74356 | 3.62393 | 11.66621 | 17.87778 |
| 1996 | 96.32 | 82.59 | 79.71 | 0.15573 | 0.18162 | 0.18817 | 1.81271 | 1.72861 | 5.98007 | 4.74909 | 3.62815 | 11.67982 | 17.89863 |
| 1997 | 96.20 | 82.49 | 79.61 | 0.15593 | 0.18185 | 0.18842 | 1.81504 | 1.73083 | 5.98775 | 4.75519 | 3.63281 | 11.69482 | 17.92162 |
| 1998 | 96.06 | 82.37 | 79.50 | 0.15615 | 0.18211 | 0.18868 | 1.81760 | 1.73328 | 5.99622 | 4.76192 | 3.63795 | 11.71137 | 17.94697 |
| 1999 | 95.91 | 82.24 | 79.37 | 0.15639 | 0.18239 | 0.18898 | 1.82044 | 1.73598 | 6.00557 | 4.76934 | 3.64362 | 11.72962 | 17.97495 |
| 2000 | 95.75 | 82.10 | 79.24 | 0.15666 | 0.18270 | 0.18930 | 1.82356 | 1.73897 | 6.01588 | 4.77753 | 3.64988 | 11.74977 | 18.00582 |
| 2001 | 95.57 | 81.94 | 79.09 | 0.15696 | 0.18305 | 0.18966 | 1.82702 | 1.74226 | 6.02727 | 4.78657 | 3.65679 | 11.77201 | 18.03991 |
| 2002 | 95.37 | 81.77 | 78.92 | 0.15729 | 0.18343 | 0.19006 | 1.83083 | 1.74589 | 6.03984 | 4.79656 | 3.66442 | 11.79657 | 18.07755 |
| 2003 | 95.15 | 81.59 | 78.74 | 0.15765 | 0.18385 | 0.19049 | 1.83504 | 1.74991 | 6.05374 | 4.80760 | 3.67285 | 11.82371 | 18.11914 |
| 2004 | 94.91 | 81.38 | 78.54 | 0.15805 | 0.18432 | 0.19098 | 1.83970 | 1.75435 | 6.06910 | 4.81979 | 3.68217 | 11.85371 | 18.16510 |
| 2005 | 94.64 | 81.15 | 78.32 | 0.15849 | 0.18484 | 0.19151 | 1.84484 | 1.75926 | 6.08608 | 4.83328 | 3.69247 | 11.88688 | 18.21594 |
| 2006 | 94.35 | 80.90 | 78.08 | 0.15898 | 0.18541 | 0.19210 | 1.85054 | 1.76469 | 6.10487 | 4.84821 | 3.70387 | 11.92358 | 18.27218 |
| 2007 | 94.03 | 80.63 | 77.82 | 0.15952 | 0.18604 | 0.19276 | 1.85685 | 1.77070 | 6.12568 | 4.86473 | 3.71650 | 11.96422 | 18.33446 |
| 2008 | 93.68 | 80.33 | 77.53 | 0.16012 | 0.18674 | 0.19348 | 1.86383 | 1.77737 | 6.14873 | 4.88304 | 3.73048 | 12.00924 | 18.40345 |
| 2009 | 93.29 | 79.99 | 77.21 | 0.16079 | 0.18752 | 0.19429 | 1.87158 | 1.78476 | 6.17429 | 4.90333 | 3.74599 | 12.05916 | 18.47995 |
| 2010 | 92.86 | 79.63 | 76.85 | 0.16153 | 0.18838 | 0.19518 | 1.88018 | 1.79295 | 6.20265 | 4.92586 | 3.76320 | 12.11455 | 18.56483 |

FUENTE: Elaboración propia

Cuadro N° A.5.39
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 10%, TRAMO
4. SITUACIÓN CON PROYECTO
(km 103-112)

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobús | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobús | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobús | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 95.76 | 82.11 | 79.25 | 0.09399 | 0.10961 | 0.11357 | 1.09399 | 1.04323 | 3.60903 | 2.86612 | 2.18963 | 7.04888 | 10.80200 |
| 1996 | 95.58 | 81.96 | 79.10 | 0.09416 | 0.10981 | 0.11378 | 1.09604 | 1.04519 | 3.61581 | 2.87151 | 2.19374 | 7.06213 | 10.82229 |
| 1997 | 95.38 | 81.79 | 78.94 | 0.09436 | 0.11004 | 0.11401 | 1.09831 | 1.04736 | 3.62330 | 2.87745 | 2.19828 | 7.07675 | 10.84470 |
| 1998 | 95.17 | 81.60 | 78.76 | 0.09457 | 0.11029 | 0.11427 | 1.10082 | 1.04975 | 3.63157 | 2.88402 | 2.20330 | 7.09291 | 10.86946 |
| 1999 | 94.93 | 81.40 | 78.56 | 0.09481 | 0.11057 | 0.11456 | 1.10359 | 1.05239 | 3.64071 | 2.89128 | 2.20885 | 7.11077 | 10.89683 |
| 2000 | 94.66 | 81.17 | 78.34 | 0.09507 | 0.11088 | 0.11488 | 1.10666 | 1.05532 | 3.65082 | 2.89931 | 2.21498 | 7.13052 | 10.92709 |
| 2001 | 94.37 | 80.92 | 78.10 | 0.09536 | 0.11122 | 0.11523 | 1.11005 | 1.05855 | 3.66201 | 2.90820 | 2.22177 | 7.15237 | 10.96058 |
| 2002 | 94.06 | 80.65 | 77.84 | 0.09569 | 0.11159 | 0.11562 | 1.11380 | 1.06213 | 3.67440 | 2.91803 | 2.22929 | 7.17656 | 10.99765 |
| 2003 | 93.71 | 80.35 | 77.55 | 0.09604 | 0.11201 | 0.11605 | 1.11796 | 1.06610 | 3.68812 | 2.92893 | 2.23761 | 7.20336 | 11.03872 |
| 2004 | 93.32 | 80.02 | 77.23 | 0.09644 | 0.11247 | 0.11653 | 1.12257 | 1.07049 | 3.70333 | 2.94101 | 2.24684 | 7.23307 | 11.08425 |
| 2005 | 92.90 | 79.66 | 76.88 | 0.09688 | 0.11298 | 0.11706 | 1.12769 | 1.07537 | 3.72021 | 2.95442 | 2.25708 | 7.26604 | 11.13477 |
| 2006 | 92.43 | 79.26 | 76.50 | 0.09737 | 0.11355 | 0.11765 | 1.13337 | 1.08079 | 3.73896 | 2.96931 | 2.26845 | 7.30265 | 11.19088 |
| 2007 | 91.92 | 78.82 | 76.07 | 0.09791 | 0.11419 | 0.11831 | 1.13969 | 1.08682 | 3.75980 | 2.98586 | 2.28110 | 7.34335 | 11.25326 |
| 2008 | 91.36 | 78.34 | 75.61 | 0.09852 | 0.11489 | 0.11904 | 1.14672 | 1.09352 | 3.78299 | 3.00427 | 2.29517 | 7.38866 | 11.32268 |
| 2009 | 90.74 | 77.80 | 75.09 | 0.09919 | 0.11568 | 0.11985 | 1.15455 | 1.10099 | 3.80884 | 3.02480 | 2.31085 | 7.43914 | 11.40004 |
| 2010 | 90.05 | 77.22 | 74.53 | 0.09994 | 0.11655 | 0.12076 | 1.16330 | 1.10933 | 3.83768 | 3.04771 | 2.32835 | 7.49547 | 11.48636 |

FUENTE: Elaboración propia

Cuadro N° A.5.40
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 10%, TRAMO
5. SITUACIÓN CON PROYECTO
(km 112-115)

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobús | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobús | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobús | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 96.47 | 82.72 | 79.83 | 0.03110 | 0.03627 | 0.03758 | 0.36199 | 0.34520 | 1.19419 | 0.94837 | 0.72453 | 2.33241 | 3.57428 |
| 1996 | 96.36 | 82.62 | 79.74 | 0.03113 | 0.03631 | 0.03762 | 0.36240 | 0.34559 | 1.19554 | 0.94944 | 0.72535 | 2.33505 | 3.57832 |
| 1997 | 96.24 | 82.52 | 79.65 | 0.03117 | 0.03635 | 0.03767 | 0.36285 | 0.34602 | 1.19703 | 0.95063 | 0.72625 | 2.33795 | 3.58277 |
| 1998 | 96.11 | 82.41 | 79.54 | 0.03122 | 0.03640 | 0.03772 | 0.36335 | 0.34649 | 1.19867 | 0.95193 | 0.72724 | 2.34116 | 3.58769 |
| 1999 | 95.96 | 82.28 | 79.42 | 0.03126 | 0.03646 | 0.03778 | 0.36390 | 0.34701 | 1.20048 | 0.95337 | 0.72834 | 2.34469 | 3.59310 |
| 2000 | 95.80 | 82.15 | 79.28 | 0.03131 | 0.03652 | 0.03784 | 0.36450 | 0.34759 | 1.20248 | 0.95495 | 0.72955 | 2.34860 | 3.59908 |
| 2001 | 95.63 | 82.00 | 79.14 | 0.03137 | 0.03659 | 0.03791 | 0.36517 | 0.34823 | 1.20469 | 0.95671 | 0.73089 | 2.35290 | 3.60568 |
| 2002 | 95.43 | 81.83 | 78.98 | 0.03144 | 0.03666 | 0.03798 | 0.36591 | 0.34893 | 1.20712 | 0.95864 | 0.73237 | 2.35766 | 3.61297 |
| 2003 | 95.22 | 81.65 | 78.80 | 0.03151 | 0.03674 | 0.03807 | 0.36672 | 0.34971 | 1.20981 | 0.96078 | 0.73400 | 2.36291 | 3.62102 |
| 2004 | 94.99 | 81.45 | 78.61 | 0.03158 | 0.03683 | 0.03816 | 0.36762 | 0.35057 | 1.21278 | 0.96314 | 0.73580 | 2.36872 | 3.62992 |
| 2005 | 94.73 | 81.23 | 78.40 | 0.03167 | 0.03693 | 0.03827 | 0.36862 | 0.35152 | 1.21607 | 0.96575 | 0.73780 | 2.37514 | 3.63976 |
| 2006 | 94.45 | 80.99 | 78.16 | 0.03176 | 0.03704 | 0.03838 | 0.36972 | 0.35257 | 1.21971 | 0.96863 | 0.74001 | 2.38224 | 3.65064 |
| 2007 | 94.14 | 80.72 | 77.91 | 0.03187 | 0.03717 | 0.03851 | 0.37094 | 0.35373 | 1.22373 | 0.97183 | 0.74245 | 2.39010 | 3.66269 |
| 2008 | 93.80 | 80.43 | 77.62 | 0.03198 | 0.03730 | 0.03865 | 0.37230 | 0.35502 | 1.22819 | 0.97537 | 0.74515 | 2.39881 | 3.67603 |
| 2009 | 93.42 | 80.11 | 77.31 | 0.03211 | 0.03745 | 0.03880 | 0.37379 | 0.35645 | 1.23313 | 0.97930 | 0.74815 | 2.40846 | 3.69082 |
| 2010 | 93.01 | 79.75 | 76.97 | 0.03226 | 0.03762 | 0.03898 | 0.37545 | 0.35804 | 1.23861 | 0.98365 | 0.75148 | 2.41917 | 3.70723 |

FUENTE: Elaboración propia

Cuadro N° A.5.41

PROYECTO AMPLIACIÓN A UN 3^{er}. CARRIL VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 10%. TRAMO 1

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | autobuses Chofer | | | autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 2.68486 | 2.53790 | 0.14696 | 2.56031 | 2.42016 | 0.14015 | 7.03404 | 6.64901 | 0.38503 | 5.37378 | 5.07963 | 0.29415 | 8.85729 | 8.37245 | 0.48483 | 17.29939 | 16.35245 | 0.94694 |
| 1996 | 2.71514 | 2.54117 | 0.17396 | 2.58918 | 2.42328 | 0.16589 | 7.11335 | 6.65758 | 0.45577 | 5.43437 | 5.08618 | 0.34819 | 8.95715 | 8.38324 | 0.57390 | 17.49443 | 16.37352 | 1.12090 |
| 1997 | 2.74923 | 2.54478 | 0.20445 | 2.62169 | 2.42672 | 0.19497 | 7.20267 | 6.66703 | 0.53564 | 5.50261 | 5.09340 | 0.40921 | 9.06963 | 8.39515 | 0.67448 | 17.71411 | 16.39677 | 1.31734 |
| 1998 | 2.78774 | 2.54876 | 0.23898 | 2.65841 | 2.43052 | 0.22789 | 7.30356 | 6.67746 | 0.62610 | 5.57969 | 5.10137 | 0.47832 | 9.19666 | 8.40828 | 0.78839 | 17.96223 | 16.42242 | 1.53982 |
| 1999 | 2.83136 | 2.55315 | 0.27821 | 2.70001 | 2.43471 | 0.26530 | 7.41785 | 6.68897 | 0.72888 | 5.66700 | 5.11016 | 0.55684 | 9.34058 | 8.42277 | 0.91781 | 18.24331 | 16.45072 | 1.79260 |
| 2000 | 2.87531 | 2.55800 | 0.31731 | 2.74192 | 2.43933 | 0.30259 | 7.53299 | 6.70167 | 0.83132 | 5.75496 | 5.11986 | 0.63510 | 9.48556 | 8.43877 | 1.04680 | 18.52649 | 16.48197 | 2.04452 |
| 2001 | 2.92341 | 2.56336 | 0.36005 | 2.78779 | 2.44444 | 0.34335 | 7.65900 | 6.71570 | 0.94329 | 5.85123 | 5.13058 | 0.72065 | 9.64423 | 8.45643 | 1.18780 | 18.83639 | 16.51647 | 2.31992 |
| 2002 | 2.97821 | 2.56927 | 0.40893 | 2.84004 | 2.45008 | 0.38996 | 7.80257 | 6.73121 | 1.07136 | 5.96091 | 5.14243 | 0.81848 | 9.82501 | 8.47596 | 1.34906 | 19.18948 | 16.55460 | 2.63488 |
| 2003 | 3.04091 | 2.57581 | 0.46509 | 2.89984 | 2.45632 | 0.44352 | 7.96684 | 6.74834 | 1.21850 | 6.08641 | 5.15552 | 0.93089 | 10.03187 | 8.49753 | 1.53433 | 19.59349 | 16.59674 | 2.99674 |
| 2004 | 3.11300 | 2.58305 | 0.52996 | 2.96859 | 2.46322 | 0.50537 | 8.15572 | 6.76729 | 1.38842 | 6.23071 | 5.17000 | 1.06071 | 10.26970 | 8.52140 | 1.74831 | 20.05801 | 16.64335 | 3.41466 |
| 2005 | 3.21863 | 2.59105 | 0.62758 | 3.06931 | 2.47085 | 0.59846 | 8.43244 | 6.78826 | 1.64418 | 6.44211 | 5.18601 | 1.25610 | 10.61815 | 8.54780 | 2.07035 | 20.73858 | 16.69492 | 4.04366 |
| 2006 | 3.35255 | 2.59991 | 0.75264 | 3.19702 | 2.47930 | 0.71772 | 8.78330 | 6.81148 | 1.97182 | 6.71016 | 5.20375 | 1.50641 | 11.05995 | 8.57703 | 2.48292 | 21.60147 | 16.75202 | 4.84946 |
| 2007 | 3.51335 | 2.60973 | 0.90362 | 3.35036 | 2.48866 | 0.86170 | 9.20458 | 6.83720 | 2.36738 | 7.03201 | 5.22340 | 1.80860 | 11.59044 | 8.60942 | 2.98102 | 22.63757 | 16.81528 | 5.82230 |
| 2008 | 3.70904 | 2.62062 | 1.08843 | 3.53697 | 2.49904 | 1.03793 | 9.71727 | 6.86572 | 2.85155 | 7.42369 | 5.24519 | 2.17850 | 12.23602 | 8.64533 | 3.59068 | 23.89847 | 16.88542 | 7.01305 |
| 2009 | 3.81938 | 2.63270 | 1.18668 | 3.64219 | 2.51056 | 1.13163 | 10.00633 | 6.89737 | 3.10896 | 7.64452 | 5.26937 | 2.37515 | 12.60000 | 8.68518 | 3.91482 | 24.60938 | 16.96325 | 7.64612 |
| 2010 | 3.89717 | 2.64611 | 1.25106 | 3.71638 | 2.52336 | 1.19302 | 10.21015 | 6.93252 | 3.27763 | 7.80023 | 5.29622 | 2.50401 | 12.85665 | 8.72945 | 4.12721 | 25.11065 | 17.04970 | 8.06095 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.31 y A. 5.36

Cuadro N° A.5.42

PROYECTO AMPLIACIÓN A UN 3^{er}. CARRIL VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 10%. TRAMO 2

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | autobuses Chofer | | | autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 5.93277 | 5.54316 | 0.38961 | 5.65754 | 5.28600 | 0.37154 | 15.54319 | 14.52245 | 1.02074 | 11.87450 | 11.09469 | 0.77982 | 19.57203 | 18.28671 | 1.28532 | 38.22663 | 35.71623 | 2.51040 |
| 1996 | 5.97141 | 5.54868 | 0.42273 | 5.69439 | 5.29127 | 0.40312 | 15.64443 | 14.53691 | 1.10752 | 11.95184 | 11.10573 | 0.84611 | 19.69951 | 18.30492 | 1.39459 | 38.47560 | 35.75179 | 2.72380 |
| 1997 | 6.01450 | 5.55476 | 0.45974 | 5.73548 | 5.29707 | 0.43841 | 15.75731 | 14.55285 | 1.20447 | 12.03808 | 11.11791 | 0.92017 | 19.84166 | 18.32499 | 1.51667 | 38.75323 | 35.79099 | 2.96224 |
| 1998 | 6.06262 | 5.56147 | 0.50115 | 5.78137 | 5.30346 | 0.47791 | 15.88339 | 14.57042 | 1.31297 | 12.13440 | 11.13134 | 1.00307 | 20.00041 | 18.34712 | 1.65329 | 39.06330 | 35.83421 | 3.22909 |
| 1999 | 6.11646 | 5.56887 | 0.54759 | 5.83270 | 5.31052 | 0.52219 | 16.02442 | 14.58980 | 1.43462 | 12.24215 | 11.14614 | 1.09601 | 20.17800 | 18.37152 | 1.80648 | 39.41016 | 35.88188 | 3.52828 |
| 2000 | 6.17679 | 5.57703 | 0.59976 | 5.89023 | 5.31830 | 0.57194 | 16.18248 | 14.61118 | 1.57130 | 12.36290 | 11.16247 | 1.20043 | 20.37703 | 18.39844 | 1.97859 | 39.79888 | 35.93445 | 3.86443 |
| 2001 | 6.24713 | 5.58603 | 0.66110 | 5.95731 | 5.32688 | 0.63043 | 16.36677 | 14.63477 | 1.73201 | 12.50369 | 11.18049 | 1.32320 | 20.60909 | 18.42814 | 2.18095 | 40.25213 | 35.99246 | 4.25967 |
| 2002 | 6.33426 | 5.59597 | 0.73830 | 6.04041 | 5.33636 | 0.70405 | 16.59506 | 14.66080 | 1.93426 | 12.67809 | 11.20038 | 1.47771 | 20.89654 | 18.46092 | 2.43562 | 40.81356 | 36.05649 | 4.75707 |
| 2003 | 6.43296 | 5.60694 | 0.82602 | 6.13453 | 5.34682 | 0.78770 | 16.85364 | 14.68955 | 2.16409 | 12.87564 | 11.22234 | 1.65330 | 21.22215 | 18.49712 | 2.72503 | 41.44951 | 36.12718 | 5.32232 |
| 2004 | 6.54515 | 5.61906 | 0.92609 | 6.24151 | 5.35838 | 0.88313 | 17.14754 | 14.72130 | 2.42625 | 13.10017 | 11.24660 | 1.85358 | 21.59224 | 18.53710 | 3.05514 | 42.17234 | 36.20527 | 5.96707 |
| 2005 | 6.67316 | 5.63245 | 1.04071 | 6.36358 | 5.37115 | 0.99243 | 17.48291 | 14.75638 | 2.72653 | 13.35639 | 11.27340 | 2.08298 | 22.01453 | 18.58128 | 3.43326 | 42.99714 | 36.29155 | 6.70558 |
| 2006 | 6.81988 | 5.64725 | 1.17262 | 6.50349 | 5.38527 | 1.11822 | 17.86730 | 14.79517 | 3.07214 | 13.65005 | 11.30303 | 2.34701 | 22.49856 | 18.63012 | 3.86844 | 43.94250 | 36.38694 | 7.55555 |
| 2007 | 7.05201 | 5.66363 | 1.38838 | 6.72485 | 5.40088 | 1.32397 | 18.47546 | 14.83807 | 3.63739 | 14.11466 | 11.33581 | 2.77885 | 23.26435 | 18.68414 | 4.58022 | 45.43819 | 36.49245 | 8.94573 |
| 2008 | 7.35430 | 5.68175 | 1.67255 | 7.01313 | 5.41816 | 1.59496 | 19.26744 | 14.88555 | 4.38190 | 14.71971 | 11.37208 | 3.34763 | 24.26162 | 18.74392 | 5.51770 | 47.38598 | 36.60922 | 10.77676 |
| 2009 | 7.71825 | 5.70182 | 2.01643 | 7.36018 | 5.43730 | 1.92288 | 20.22093 | 14.93812 | 5.28281 | 15.44815 | 11.41225 | 4.03590 | 25.46226 | 18.81013 | 6.65213 | 49.73097 | 36.73853 | 12.99244 |
| 2010 | 8.16258 | 5.72406 | 2.43852 | 7.78391 | 5.45851 | 2.32540 | 21.38504 | 14.99639 | 6.38865 | 16.33749 | 11.45676 | 4.88073 | 26.92811 | 18.88350 | 8.04461 | 52.59397 | 36.88184 | 15.71213 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.32 y A. 5.37

Cuadro N° A.5.43

PROYECTO AMPLIACIÓN A UN 3^{er} CARRIL VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 10%. TRAMO 3

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | autobuses Chofer | | | autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.95289 | 1.81060 | 0.14229 | 1.86229 | 1.72660 | 0.13569 | 5.11635 | 4.74356 | 0.37280 | 3.90873 | 3.62393 | 0.28480 | 6.44253 | 5.97310 | 0.46943 | 12.58306 | 11.66621 | 0.91685 |
| 1996 | 1.95289 | 1.81060 | 0.14229 | 1.86229 | 1.72660 | 0.13569 | 5.11635 | 4.74356 | 0.37280 | 3.90873 | 3.62393 | 0.28480 | 6.49072 | 5.98007 | 0.46943 | 12.67719 | 11.67982 | 0.99737 |
| 1997 | 1.96750 | 1.81271 | 0.15479 | 1.87622 | 1.72861 | 0.14761 | 5.15463 | 4.74909 | 0.40554 | 3.93797 | 3.62815 | 0.30982 | 6.54458 | 5.98775 | 0.51066 | 12.78238 | 11.69482 | 1.08756 |
| 1998 | 1.98382 | 1.81504 | 0.16879 | 1.89179 | 1.73083 | 0.16096 | 5.19740 | 4.75519 | 0.44221 | 3.97064 | 3.63281 | 0.33783 | 6.60486 | 5.99622 | 0.55683 | 12.90011 | 11.71137 | 1.18875 |
| 1999 | 2.00210 | 1.81760 | 0.18449 | 1.90922 | 1.73328 | 0.17593 | 5.24527 | 4.76192 | 0.48335 | 4.00722 | 3.63795 | 0.36927 | 6.67246 | 6.00557 | 0.60864 | 13.03216 | 11.72962 | 1.30254 |
| 2000 | 2.02259 | 1.82044 | 0.20215 | 1.92876 | 1.73598 | 0.19278 | 5.29896 | 4.76934 | 0.52962 | 4.04824 | 3.64362 | 0.40461 | 6.75587 | 6.01588 | 0.66690 | 13.19506 | 11.74977 | 1.44529 |
| 2001 | 2.04787 | 1.82356 | 0.22431 | 1.95287 | 1.73897 | 0.21390 | 5.36519 | 4.77753 | 0.58766 | 4.09884 | 3.64988 | 0.44896 | 6.85428 | 6.02727 | 0.73999 | 13.38726 | 11.77201 | 1.61525 |
| 2002 | 2.07770 | 1.82702 | 0.25069 | 1.98131 | 1.74226 | 0.23906 | 5.44335 | 4.78657 | 0.65677 | 4.15854 | 3.65679 | 0.50175 | 6.96589 | 6.03984 | 0.82701 | 13.60526 | 11.79657 | 1.80868 |
| 2003 | 2.11154 | 1.83083 | 0.28071 | 2.01358 | 1.74589 | 0.26769 | 5.53198 | 4.79656 | 0.73542 | 4.22626 | 3.66442 | 0.56184 | 7.09294 | 6.05374 | 0.92605 | 13.85340 | 11.82371 | 2.02969 |
| 2004 | 2.15005 | 1.83504 | 0.31501 | 2.05030 | 1.74991 | 0.30039 | 5.63288 | 4.80760 | 0.82529 | 4.30334 | 3.67285 | 0.63049 | 7.23816 | 6.06910 | 1.03920 | 14.13703 | 11.85371 | 2.28332 |
| 2005 | 2.19407 | 1.83970 | 0.35437 | 2.09228 | 1.75435 | 0.33793 | 5.74821 | 4.81979 | 0.92841 | 4.39145 | 3.68217 | 0.70928 | 7.41496 | 6.08608 | 1.16906 | 14.48234 | 11.88688 | 2.59546 |
| 2006 | 2.24766 | 1.84484 | 0.40282 | 2.14339 | 1.75926 | 0.38413 | 5.88861 | 4.83328 | 1.05533 | 4.49871 | 3.69247 | 0.80624 | 7.70679 | 6.10487 | 1.32888 | 15.05233 | 11.92358 | 3.12874 |
| 2007 | 2.33612 | 1.85054 | 0.48558 | 2.22774 | 1.76469 | 0.46305 | 6.12037 | 4.84821 | 1.27217 | 4.67577 | 3.70387 | 0.97189 | 8.05554 | 6.12568 | 1.60192 | 15.73347 | 11.96422 | 3.76925 |
| 2008 | 2.44184 | 1.85685 | 0.58499 | 2.32855 | 1.77070 | 0.55785 | 6.39733 | 4.86473 | 1.53260 | 4.88736 | 3.71650 | 1.17086 | 8.47752 | 6.14873 | 1.92986 | 16.55767 | 12.00924 | 4.54842 |
| 2009 | 2.56975 | 1.86383 | 0.70592 | 2.45053 | 1.77737 | 0.67317 | 6.73245 | 4.88304 | 1.84942 | 5.14338 | 3.73048 | 1.41290 | 8.99590 | 6.17429 | 2.32879 | 17.57011 | 12.05916 | 5.51095 |
| 2010 | 2.72688 | 1.87158 | 0.85530 | 2.60038 | 1.78476 | 0.81562 | 7.14412 | 4.90333 | 2.24079 | 5.45788 | 3.74599 | 1.71189 | 9.00000 | 6.20265 | 2.82161 | 17.57813 | 12.11455 | 5.46357 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.33 y A. 5.38

Cuadro N° A.5.44

PROYECTO AMPLIACIÓN A UN 3^{er} CARRIL VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 10%. TRAMO 4

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | autobuses Chofer | | | autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.19398 | 1.09399 | 0.09999 | 1.13859 | 1.04323 | 0.09535 | 3.12809 | 2.86612 | 0.26197 | 2.38976 | 2.18963 | 0.20013 | 3.93890 | 3.60903 | 0.32987 | 7.69316 | 7.04888 | 0.64427 |
| 1996 | 1.20353 | 1.09604 | 0.10749 | 1.14770 | 1.04519 | 0.10250 | 3.15311 | 2.87151 | 0.28161 | 2.40888 | 2.19374 | 0.21514 | 3.97041 | 3.61581 | 0.35460 | 7.75471 | 7.06213 | 0.69258 |
| 1997 | 1.21422 | 1.09831 | 0.11590 | 1.15789 | 1.04736 | 0.11053 | 3.18111 | 2.87745 | 0.30366 | 2.43026 | 2.19828 | 0.23198 | 4.00566 | 3.62330 | 0.38236 | 7.82356 | 7.07675 | 0.74680 |
| 1998 | 1.22693 | 1.10082 | 0.12611 | 1.17001 | 1.04975 | 0.12026 | 3.21443 | 2.88402 | 0.33040 | 2.45572 | 2.20330 | 0.25242 | 4.04761 | 3.63157 | 0.41604 | 7.90550 | 7.09291 | 0.81259 |
| 1999 | 1.24164 | 1.10359 | 0.13805 | 1.18404 | 1.05239 | 0.13165 | 3.25297 | 2.89128 | 0.36168 | 2.48516 | 2.20885 | 0.27631 | 4.09615 | 3.64071 | 0.45543 | 8.00028 | 7.11077 | 0.88952 |
| 2000 | 1.25824 | 1.10666 | 0.15158 | 1.19987 | 1.05532 | 0.14455 | 3.29644 | 2.89931 | 0.39713 | 2.51838 | 2.21498 | 0.30339 | 4.15089 | 3.65082 | 0.50007 | 8.10721 | 7.13052 | 0.97669 |
| 2001 | 1.27701 | 1.11005 | 0.16697 | 1.21777 | 1.05855 | 0.15922 | 3.34563 | 2.90820 | 0.43743 | 2.55596 | 2.22177 | 0.33419 | 4.21283 | 3.66201 | 0.55082 | 8.22818 | 7.15237 | 1.07582 |
| 2002 | 1.29832 | 1.11380 | 0.18452 | 1.23809 | 1.06213 | 0.17596 | 3.40146 | 2.91803 | 0.48343 | 2.59861 | 2.22929 | 0.36932 | 4.28313 | 3.67440 | 0.60873 | 8.36549 | 7.17856 | 1.18893 |
| 2003 | 1.32260 | 1.11796 | 0.20464 | 1.26124 | 1.06610 | 0.19515 | 3.46507 | 2.92893 | 0.53614 | 2.64720 | 2.23761 | 0.40959 | 4.36322 | 3.68812 | 0.67510 | 8.52192 | 7.20336 | 1.31856 |
| 2004 | 1.35467 | 1.12257 | 0.23209 | 1.29182 | 1.07049 | 0.22133 | 3.54907 | 2.94101 | 0.60806 | 2.71138 | 2.24684 | 0.46454 | 4.46900 | 3.70333 | 0.76567 | 8.72851 | 7.23307 | 1.49544 |
| 2005 | 1.40622 | 1.12769 | 0.27853 | 1.34099 | 1.07537 | 0.26561 | 3.68415 | 2.95442 | 0.72973 | 2.81457 | 2.25708 | 0.55749 | 4.63909 | 3.72021 | 0.91888 | 9.06072 | 7.26604 | 1.79468 |
| 2006 | 1.46767 | 1.13337 | 0.33430 | 1.39958 | 1.08079 | 0.31879 | 3.84513 | 2.96931 | 0.87582 | 2.93755 | 2.26845 | 0.66910 | 4.84179 | 3.73896 | 1.10284 | 9.45663 | 7.30265 | 2.15397 |
| 2007 | 1.54177 | 1.13969 | 0.40208 | 1.47025 | 1.08682 | 0.38343 | 4.03927 | 2.98586 | 1.05342 | 3.08587 | 2.28110 | 0.80478 | 5.08626 | 3.75980 | 1.32646 | 9.93410 | 7.34335 | 2.59075 |
| 2008 | 1.63244 | 1.14672 | 0.48572 | 1.55671 | 1.09352 | 0.46319 | 4.27681 | 3.00427 | 1.27253 | 3.26734 | 2.29517 | 0.97217 | 5.38537 | 3.78299 | 1.60238 | 10.51830 | 7.38866 | 3.12964 |
| 2009 | 1.63688 | 1.15455 | 0.48232 | 1.56094 | 1.10099 | 0.45995 | 4.28843 | 3.02480 | 1.26363 | 3.27622 | 2.31085 | 0.96537 | 5.40000 | 3.80884 | 1.59116 | 10.54688 | 7.43914 | 3.10774 |
| 2010 | 1.63688 | 1.16330 | 0.47358 | 1.56094 | 1.10933 | 0.45161 | 4.28843 | 3.04771 | 1.24072 | 3.27622 | 2.32835 | 0.94787 | 5.40000 | 3.83768 | 1.56232 | 10.54688 | 7.49547 | 3.05141 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.34 y A. 5.39

Cuadro N° A.5.45
PROYECTO AMPLIACIÓN A UN 3^{er} CARRIL VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 10%. TRAMO 5

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | autobuses Chofer | | | autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 0.37864 | 0.36199 | 0.01665 | 0.36107 | 0.34520 | 0.01588 | 0.99199 | 0.94837 | 0.04362 | 0.75785 | 0.72453 | 0.03332 | 1.24912 | 1.19419 | 0.05492 | 2.43968 | 2.33241 | 0.10727 |
| 1996 | 0.38227 | 0.36240 | 0.01987 | 0.36454 | 0.34559 | 0.01895 | 1.00151 | 0.94944 | 0.05206 | 0.76512 | 0.72535 | 0.03977 | 1.26110 | 1.19554 | 0.06555 | 2.46308 | 2.33505 | 0.12804 |
| 1997 | 0.38635 | 0.36285 | 0.02350 | 0.36842 | 0.34602 | 0.02241 | 1.01219 | 0.95063 | 0.06156 | 0.77328 | 0.72625 | 0.04703 | 1.27455 | 1.19703 | 0.07752 | 2.48935 | 2.33795 | 0.15140 |
| 1998 | 0.39093 | 0.36335 | 0.02759 | 0.37280 | 0.34649 | 0.02631 | 1.02420 | 0.95193 | 0.07227 | 0.78246 | 0.72724 | 0.05521 | 1.28968 | 1.19867 | 0.09100 | 2.51890 | 2.34116 | 0.17774 |
| 1999 | 0.39611 | 0.36390 | 0.03221 | 0.37773 | 0.34701 | 0.03071 | 1.03775 | 0.95337 | 0.08438 | 0.79281 | 0.72834 | 0.06447 | 1.30674 | 1.20048 | 0.10626 | 2.55223 | 2.34469 | 0.20753 |
| 2000 | 0.40196 | 0.36450 | 0.03745 | 0.38331 | 0.34759 | 0.03572 | 1.05308 | 0.95495 | 0.09812 | 0.80452 | 0.72955 | 0.07496 | 1.32604 | 1.20248 | 0.12356 | 2.58992 | 2.34860 | 0.24132 |
| 2001 | 0.40825 | 0.36517 | 0.04308 | 0.38931 | 0.34823 | 0.04108 | 1.06958 | 0.95671 | 0.11287 | 0.81712 | 0.73089 | 0.08623 | 1.34682 | 1.20469 | 0.14213 | 2.63050 | 2.35290 | 0.27760 |
| 2002 | 0.41478 | 0.36591 | 0.04887 | 0.39554 | 0.34893 | 0.04661 | 1.08668 | 0.95864 | 0.12805 | 0.83019 | 0.73237 | 0.09782 | 1.36836 | 1.20712 | 0.16123 | 2.67257 | 2.35766 | 0.31491 |
| 2003 | 0.42221 | 0.36672 | 0.05549 | 0.40262 | 0.34971 | 0.05291 | 1.10614 | 0.96078 | 0.14537 | 0.84506 | 0.73400 | 0.11106 | 1.39286 | 1.20981 | 0.18305 | 2.72043 | 2.36291 | 0.35752 |
| 2004 | 0.43070 | 0.36762 | 0.06307 | 0.41071 | 0.35057 | 0.06014 | 1.12837 | 0.96314 | 0.16524 | 0.86204 | 0.73580 | 0.12624 | 1.42085 | 1.21278 | 0.20807 | 2.77510 | 2.36872 | 0.40638 |
| 2005 | 0.44043 | 0.36862 | 0.07181 | 0.42000 | 0.35152 | 0.06848 | 1.15388 | 0.96575 | 0.18813 | 0.88153 | 0.73780 | 0.14373 | 1.45297 | 1.21607 | 0.23690 | 2.83782 | 2.37514 | 0.46269 |
| 2006 | 0.45304 | 0.36972 | 0.08332 | 0.43202 | 0.35257 | 0.07945 | 1.18692 | 0.96863 | 0.21829 | 0.90677 | 0.74001 | 0.16676 | 1.49457 | 1.21971 | 0.27487 | 2.91909 | 2.38224 | 0.53685 |
| 2007 | 0.47085 | 0.37094 | 0.09990 | 0.44900 | 0.35373 | 0.09527 | 1.23356 | 0.97183 | 0.26173 | 0.94240 | 0.74245 | 0.19996 | 1.55331 | 1.22373 | 0.32958 | 3.03381 | 2.39010 | 0.64370 |
| 2008 | 0.49212 | 0.37230 | 0.11983 | 0.46929 | 0.35502 | 0.11427 | 1.28930 | 0.97537 | 0.31393 | 0.98498 | 0.74515 | 0.23983 | 1.62349 | 1.22819 | 0.39530 | 3.17088 | 2.39881 | 0.77207 |
| 2009 | 0.51786 | 0.37379 | 0.14407 | 0.49383 | 0.35645 | 0.13738 | 1.35673 | 0.97930 | 0.37744 | 1.03650 | 0.74815 | 0.28835 | 1.70840 | 1.23313 | 0.47527 | 3.33672 | 2.40846 | 0.92826 |
| 2010 | 0.54947 | 0.37545 | 0.17401 | 0.52398 | 0.35804 | 0.16594 | 1.43955 | 0.98365 | 0.45590 | 1.09977 | 0.75148 | 0.34829 | 1.81268 | 1.23861 | 0.57407 | 3.54040 | 2.41917 | 1.12123 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.35 y A. 5.40

Cuadro N° A.5.46
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 15%, TRAMO
1. SITUACIÓN SIN PROYECTO
(km 21-42)

| Año | vel. promedio (km/h), autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas bs.camionetas y auto | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobús | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobús | Total \$ |
|------|---|--|---------------------------------------|---|------------------------------------|------------------------------------|-----------------|----------------------|-------------------------------|-----------------------------|----------------------------|--------------------------------|----------|
| 1995 | 91.04 | 78.07 | 75.35 | 0.23066 | 0.26900 | 0.27871 | 2.68486 | 2.56031 | 8.85729 | 7.03404 | 5.37378 | 17.29939 | 26.51029 |
| 1996 | 89.52 | 76.76 | 74.09 | 0.23458 | 0.27357 | 0.28345 | 2.73053 | 2.60385 | 9.00793 | 7.15367 | 5.46518 | 17.59360 | 26.96116 |
| 1997 | 87.77 | 75.26 | 72.64 | 0.23926 | 0.27903 | 0.28911 | 2.78500 | 2.65580 | 9.18762 | 7.29638 | 5.57420 | 17.94457 | 27.49900 |
| 1998 | 85.79 | 73.56 | 71.00 | 0.24478 | 0.28547 | 0.29577 | 2.84922 | 2.71704 | 9.39949 | 7.46464 | 5.70274 | 18.35839 | 28.13314 |
| 1999 | 83.81 | 71.87 | 69.36 | 0.25056 | 0.29221 | 0.30277 | 2.91658 | 2.78127 | 9.62169 | 7.64110 | 5.83755 | 18.79237 | 28.79819 |
| 2000 | 81.53 | 69.91 | 67.47 | 0.25757 | 0.30038 | 0.31123 | 2.99808 | 2.85899 | 9.89057 | 7.85463 | 6.00068 | 19.31752 | 29.60295 |
| 2001 | 78.91 | 67.66 | 65.31 | 0.26612 | 0.31035 | 0.32156 | 3.09763 | 2.95392 | 10.21897 | 8.11543 | 6.19993 | 19.95893 | 30.58587 |
| 2002 | 75.17 | 64.46 | 62.21 | 0.27937 | 0.32580 | 0.33757 | 3.25182 | 3.10096 | 10.72765 | 8.51940 | 6.50855 | 20.95245 | 32.10839 |
| 2003 | 70.50 | 60.45 | 58.35 | 0.29786 | 0.34737 | 0.35991 | 3.46707 | 3.30623 | 11.43775 | 9.08333 | 6.93937 | 22.33936 | 34.23375 |
| 2004 | 65.14 | 55.85 | 53.91 | 0.32240 | 0.37599 | 0.38957 | 3.75274 | 3.57864 | 12.38016 | 9.83175 | 7.51114 | 24.18001 | 37.05443 |
| 2005 | 61.05 | 52.35 | 50.52 | 0.34400 | 0.40118 | 0.41567 | 4.00416 | 3.81840 | 13.20959 | 10.49044 | 8.01436 | 25.79998 | 39.53695 |
| 2006 | 56.88 | 48.78 | 47.08 | 0.36918 | 0.43054 | 0.44609 | 4.29720 | 4.09785 | 14.17633 | 11.25818 | 8.60089 | 27.68815 | 42.43046 |
| 2007 | 52.10 | 44.67 | 43.11 | 0.40310 | 0.47010 | 0.48708 | 4.69210 | 4.47443 | 15.47910 | 12.29277 | 9.39129 | 30.23261 | 46.32969 |
| 2008 | 46.59 | 39.95 | 38.56 | 0.45074 | 0.52566 | 0.54464 | 5.24657 | 5.00317 | 17.30826 | 13.74541 | 10.50105 | 33.80520 | 51.80446 |
| 2009 | 40.26 | 34.52 | 33.32 | 0.52162 | 0.60833 | 0.63029 | 6.07168 | 5.79000 | 20.03028 | 15.90711 | 12.15253 | 39.12165 | 59.95161 |
| 2010 | 32.98 | 28.28 | 27.29 | 0.63679 | 0.74264 | 0.76945 | 7.41224 | 7.06837 | 24.45274 | 19.41922 | 14.83566 | 47.75926 | 73.18824 |

FUENTE: Elaboración propia

Cuadro A.5.47

**COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 15%, TRAMO
2. SITUACIÓN SIN PROYECTO
(km 42-88)**

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas bs.camionetas y autc | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobús | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobús | Total \$ |
|------|--|--|---|---|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 90.25 | 77.39 | 74.69 | 0.50969 | 0.59441 | 0.61587 | 5.93277 | 5.65754 | 19.57203 | 15.54319 | 11.87450 | 38.22663 | 58.58004 |
| 1996 | 89.38 | 76.64 | 73.97 | 0.51468 | 0.60023 | 0.62191 | 5.99092 | 5.71299 | 19.76387 | 15.69554 | 11.99089 | 38.60130 | 59.15421 |
| 1997 | 88.37 | 75.77 | 73.13 | 0.52055 | 0.60708 | 0.62900 | 6.05922 | 5.77812 | 19.98918 | 15.87447 | 12.12759 | 39.04136 | 59.82857 |
| 1998 | 87.21 | 74.78 | 72.17 | 0.52747 | 0.61514 | 0.63736 | 6.13971 | 5.85488 | 20.25472 | 16.08535 | 12.28869 | 39.55999 | 60.62335 |
| 1999 | 86.90 | 74.52 | 71.92 | 0.52933 | 0.61732 | 0.63961 | 6.16143 | 5.87559 | 20.32637 | 16.14225 | 12.33217 | 39.69995 | 60.83782 |
| 2000 | 85.77 | 73.55 | 70.98 | 0.53631 | 0.62546 | 0.64804 | 6.24266 | 5.95305 | 20.59435 | 16.35507 | 12.49475 | 40.22333 | 61.63987 |
| 2001 | 84.36 | 72.34 | 69.82 | 0.54526 | 0.63589 | 0.65885 | 6.34681 | 6.05237 | 20.93793 | 16.62792 | 12.70320 | 40.89439 | 62.66823 |
| 2002 | 82.79 | 70.99 | 68.51 | 0.55564 | 0.64800 | 0.67140 | 6.46766 | 6.16761 | 21.33661 | 16.94454 | 12.94508 | 41.67307 | 63.86151 |
| 2003 | 81.02 | 69.47 | 67.05 | 0.56775 | 0.66212 | 0.68603 | 6.60860 | 6.30201 | 21.80155 | 17.31377 | 13.22717 | 42.58115 | 65.25310 |
| 2004 | 79.04 | 67.78 | 65.42 | 0.58195 | 0.67868 | 0.70319 | 6.77392 | 6.45966 | 22.34694 | 17.74690 | 13.55806 | 43.64637 | 66.88548 |
| 2005 | 76.25 | 65.38 | 63.10 | 0.60327 | 0.70354 | 0.72895 | 7.02204 | 6.69628 | 23.16550 | 18.39696 | 14.05469 | 45.24512 | 69.33547 |
| 2006 | 72.55 | 62.21 | 60.04 | 0.63409 | 0.73949 | 0.76619 | 7.38080 | 7.03839 | 24.34902 | 19.33685 | 14.77274 | 47.55668 | 72.87779 |
| 2007 | 68.39 | 58.65 | 56.60 | 0.67257 | 0.78437 | 0.81269 | 7.82876 | 7.46557 | 25.82684 | 20.51047 | 15.66934 | 50.44305 | 77.30098 |
| 2008 | 64.00 | 54.88 | 52.97 | 0.71875 | 0.83822 | 0.86849 | 8.36625 | 7.97813 | 27.60000 | 21.91863 | 16.74513 | 53.90625 | 82.60813 |
| 2009 | 58.54 | 50.19 | 48.44 | 0.78582 | 0.91644 | 0.94953 | 9.14693 | 8.72258 | 30.17542 | 23.96391 | 18.30766 | 58.93637 | 90.31650 |
| 2010 | 52.71 | 45.19 | 43.62 | 0.87277 | 1.01784 | 1.05460 | 10.15904 | 9.68774 | 33.51436 | 26.61553 | 20.33342 | 65.45773 | 100.31009 |

FUENTE: Elaboración propia

Cuadro N° A.5.48

**COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 15%, TRAMO
3. SITUACIÓN SIN PROYECTO
(km 88-103)**

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas bs.camionetas y autc | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobús | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobús | Total \$ |
|------|--|--|---|---|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 89.41 | 76.66 | 73.99 | 0.16777 | 0.19566 | 0.20273 | 1.95289 | 1.86229 | 6.44253 | 5.11635 | 3.90873 | 12.58306 | 19.28279 |
| 1996 | 88.41 | 75.81 | 73.17 | 0.16966 | 0.19787 | 0.20501 | 1.97489 | 1.88327 | 6.51509 | 5.17398 | 3.95276 | 12.72479 | 19.49998 |
| 1997 | 87.26 | 74.83 | 72.22 | 0.17189 | 0.20046 | 0.20770 | 2.00080 | 1.90798 | 6.60059 | 5.24188 | 4.00463 | 12.89177 | 19.75588 |
| 1998 | 85.94 | 73.69 | 71.12 | 0.17454 | 0.20355 | 0.21090 | 2.03164 | 1.93739 | 6.70231 | 5.32266 | 4.06634 | 13.09046 | 20.06035 |
| 1999 | 84.21 | 72.20 | 69.69 | 0.17813 | 0.20774 | 0.21524 | 2.07347 | 1.97728 | 6.84032 | 5.43226 | 4.15008 | 13.36001 | 20.47342 |
| 2000 | 82.21 | 70.49 | 68.04 | 0.18245 | 0.21278 | 0.22047 | 2.12376 | 2.02524 | 7.00623 | 5.56402 | 4.25073 | 13.68404 | 20.96999 |
| 2001 | 79.92 | 68.53 | 66.14 | 0.18769 | 0.21889 | 0.22679 | 2.18470 | 2.08335 | 7.20726 | 5.72367 | 4.37270 | 14.07668 | 21.57168 |
| 2002 | 76.93 | 65.96 | 63.67 | 0.19498 | 0.22739 | 0.23561 | 2.26962 | 2.16433 | 7.48741 | 5.94615 | 4.54267 | 14.62384 | 22.41017 |
| 2003 | 72.40 | 62.08 | 59.92 | 0.20717 | 0.24161 | 0.25033 | 2.41146 | 2.29959 | 7.95535 | 6.31776 | 4.82657 | 15.53779 | 23.81074 |
| 2004 | 67.20 | 57.62 | 55.61 | 0.22321 | 0.26032 | 0.26972 | 2.59820 | 2.47767 | 8.57138 | 6.80699 | 5.20032 | 16.74099 | 25.65457 |
| 2005 | 62.61 | 53.68 | 51.81 | 0.23959 | 0.27942 | 0.28951 | 2.78884 | 2.65946 | 9.20029 | 7.30644 | 5.58189 | 17.96931 | 27.53691 |
| 2006 | 59.16 | 50.73 | 48.96 | 0.25354 | 0.29568 | 0.30636 | 2.95119 | 2.81428 | 9.73588 | 7.73178 | 5.90683 | 19.01539 | 29.13996 |
| 2007 | 55.20 | 47.33 | 45.68 | 0.27173 | 0.31690 | 0.32834 | 3.16294 | 3.01620 | 10.43443 | 8.28654 | 6.33065 | 20.37975 | 31.23076 |
| 2008 | 50.65 | 43.43 | 41.91 | 0.29617 | 0.34540 | 0.35787 | 3.44739 | 3.28746 | 11.37283 | 9.03177 | 6.89999 | 22.21257 | 34.03944 |
| 2009 | 45.41 | 38.94 | 37.58 | 0.33033 | 0.38524 | 0.39915 | 3.84506 | 3.66668 | 12.68473 | 10.07362 | 7.69592 | 24.77487 | 37.96602 |
| 2010 | 39.39 | 33.77 | 32.59 | 0.38085 | 0.44416 | 0.46020 | 4.43315 | 4.22748 | 14.62481 | 11.61434 | 8.87298 | 28.56408 | 43.77277 |

FUENTE: Elaboración propia

Cuadro N° A.5.49

**COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 15%, TRAMO
4. SITUACIÓN SIN PROYECTO
(km 103-112)**

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas bs.camionetas y autc | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobús | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobús | Total \$ |
|------|--|--|---|---|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 87.74 | 75.23 | 72.61 | 0.10258 | 0.11963 | 0.12395 | 1.19398 | 1.13859 | 3.93890 | 3.12809 | 2.38976 | 7.69316 | 11.78931 |
| 1996 | 86.70 | 74.34 | 71.75 | 0.10381 | 0.12107 | 0.12544 | 1.20836 | 1.15231 | 3.98636 | 3.16578 | 2.41855 | 7.78585 | 11.93135 |
| 1997 | 85.45 | 73.27 | 70.72 | 0.10533 | 0.12283 | 0.12727 | 1.22601 | 1.16913 | 4.04455 | 3.21200 | 2.45386 | 7.89952 | 12.10554 |
| 1998 | 83.94 | 71.98 | 69.47 | 0.10722 | 0.12504 | 0.12956 | 1.24803 | 1.19013 | 4.11720 | 3.26969 | 2.49794 | 8.04141 | 12.32299 |
| 1999 | 82.21 | 70.49 | 68.03 | 0.10948 | 0.12768 | 0.13229 | 1.27435 | 1.21523 | 4.20404 | 3.33866 | 2.55063 | 8.21102 | 12.58291 |
| 2000 | 80.21 | 68.78 | 66.38 | 0.11220 | 0.13085 | 0.13558 | 1.30603 | 1.24544 | 4.30855 | 3.42165 | 2.61403 | 8.41514 | 12.89571 |
| 2001 | 77.87 | 66.77 | 64.45 | 0.11557 | 0.13478 | 0.13965 | 1.34528 | 1.28287 | 4.43802 | 3.52447 | 2.69258 | 8.66801 | 13.28322 |
| 2002 | 73.70 | 63.20 | 60.99 | 0.12212 | 0.14241 | 0.14756 | 1.42143 | 1.35549 | 4.68925 | 3.72398 | 2.84501 | 9.15870 | 14.03516 |
| 2003 | 68.90 | 59.08 | 57.02 | 0.13062 | 0.15233 | 0.15783 | 1.52041 | 1.44987 | 5.01578 | 3.98330 | 3.04311 | 9.79644 | 15.01247 |
| 2004 | 63.73 | 54.65 | 52.74 | 0.14122 | 0.16469 | 0.17064 | 1.64377 | 1.56751 | 5.42275 | 4.30649 | 3.29002 | 10.59131 | 16.23055 |
| 2005 | 60.96 | 52.27 | 50.45 | 0.14763 | 0.17217 | 0.17839 | 1.71847 | 1.63875 | 5.66918 | 4.50220 | 3.43953 | 11.07261 | 16.96812 |
| 2006 | 57.78 | 49.54 | 47.81 | 0.15578 | 0.18167 | 0.18823 | 1.81323 | 1.72911 | 5.98178 | 4.75045 | 3.62919 | 11.68317 | 17.90377 |
| 2007 | 54.11 | 46.40 | 44.78 | 0.16632 | 0.19397 | 0.20097 | 1.93599 | 1.84618 | 6.38679 | 5.07209 | 3.87491 | 12.47419 | 19.11596 |
| 2008 | 49.90 | 42.79 | 41.30 | 0.18037 | 0.21035 | 0.21794 | 2.09946 | 2.00206 | 6.92606 | 5.50035 | 4.20210 | 13.52747 | 20.73004 |
| 2009 | 45.05 | 38.63 | 37.29 | 0.19976 | 0.23297 | 0.24138 | 2.32525 | 2.21738 | 7.67092 | 6.09189 | 4.65401 | 14.98227 | 22.95944 |
| 2010 | 39.48 | 33.85 | 32.67 | 0.22796 | 0.26585 | 0.27545 | 2.65341 | 2.53032 | 8.75352 | 6.95164 | 5.31083 | 17.09673 | 26.19972 |

FUENTE: Elaboración propia

Cuadro N° A.5.50
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 15%, TRAMO
5. SITUACIÓN SIN PROYECTO
(km 112-115)

| Año | Velocidad promedio (km/h). autos, camionetas y autobús | Velocidad promedio (km/h). Camiones | Velocidad promedio (km/h). Camiones | Tiempo promedio en horas bs, camionetas y auto | Tiempo promedio en horas Camiones | Tiempo promedio en horas Camiones | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Chóferes | \$ tiempo Camiones | \$ tiempo Camiones | \$ tiempo Pasajeros autobús | Total \$ |
|------|--|---|---|--|---|---|--------------------|-------------------------|-----------------------|-----------------------|-----------------------|--------------------------------|-------------|
| 1995 | 92.23 | 79.08 | 76.32 | 0.03253 | 0.03794 | 0.03931 | 0.37864 | 0.36107 | 1.24912 | 0.99199 | 0.75785 | 2.43968 | 3.73866 |
| 1996 | 90.91 | 77.95 | 75.24 | 0.03300 | 0.03848 | 0.03987 | 0.38411 | 0.36629 | 1.26718 | 1.00633 | 0.76881 | 2.47495 | 3.79272 |
| 1997 | 89.40 | 76.66 | 73.99 | 0.03356 | 0.03914 | 0.04055 | 0.39061 | 0.37249 | 1.28860 | 1.02335 | 0.78181 | 2.51680 | 3.85685 |
| 1998 | 87.66 | 75.17 | 72.55 | 0.03422 | 0.03991 | 0.04135 | 0.39835 | 0.37987 | 1.31416 | 1.04364 | 0.79731 | 2.56671 | 3.93333 |
| 1999 | 85.71 | 73.49 | 70.93 | 0.03500 | 0.04082 | 0.04230 | 0.40744 | 0.38854 | 1.34412 | 1.06744 | 0.81549 | 2.62524 | 4.02302 |
| 2000 | 83.71 | 71.78 | 69.28 | 0.03584 | 0.04179 | 0.04330 | 0.41714 | 0.39779 | 1.37614 | 1.09286 | 0.83491 | 2.68777 | 4.11885 |
| 2001 | 81.42 | 69.81 | 67.38 | 0.03685 | 0.04297 | 0.04452 | 0.42889 | 0.40899 | 1.41490 | 1.12364 | 0.85843 | 2.76347 | 4.23485 |
| 2002 | 78.78 | 67.55 | 65.20 | 0.03808 | 0.04441 | 0.04601 | 0.44325 | 0.42268 | 1.46226 | 1.16126 | 0.88716 | 2.85597 | 4.37661 |
| 2003 | 74.98 | 64.29 | 62.05 | 0.04001 | 0.04666 | 0.04835 | 0.46575 | 0.44415 | 1.53650 | 1.22022 | 0.93221 | 3.00098 | 4.59883 |
| 2004 | 70.29 | 60.27 | 58.17 | 0.04268 | 0.04978 | 0.05157 | 0.49681 | 0.47376 | 1.63897 | 1.30159 | 0.99438 | 3.20111 | 4.90552 |
| 2005 | 64.90 | 55.65 | 53.71 | 0.04623 | 0.05391 | 0.05586 | 0.53808 | 0.51312 | 1.77511 | 1.40971 | 1.07697 | 3.46701 | 5.31298 |
| 2006 | 60.89 | 52.21 | 50.39 | 0.04927 | 0.05746 | 0.05954 | 0.57353 | 0.54692 | 1.89205 | 1.50258 | 1.14792 | 3.69542 | 5.66301 |
| 2007 | 56.70 | 48.62 | 46.92 | 0.05291 | 0.06171 | 0.06393 | 0.61588 | 0.58731 | 2.03178 | 1.61354 | 1.23270 | 3.96832 | 6.08121 |
| 2008 | 51.88 | 44.49 | 42.94 | 0.05782 | 0.06743 | 0.06987 | 0.67304 | 0.64182 | 2.22034 | 1.76329 | 1.34710 | 4.33660 | 6.64558 |
| 2009 | 46.35 | 39.74 | 38.36 | 0.06473 | 0.07549 | 0.07822 | 0.75345 | 0.71850 | 2.48562 | 1.97396 | 1.50804 | 4.85473 | 7.43958 |
| 2010 | 39.98 | 34.28 | 33.09 | 0.07504 | 0.08751 | 0.09067 | 0.87347 | 0.83295 | 2.88154 | 2.28839 | 1.74826 | 5.62802 | 8.62460 |

FUENTE: Elaboración propia

Cuadro N° A.5.51
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 15%, TRAMO
1. SITUACIÓN CON PROYECTO
(km 21-42)

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobuses | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobus | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobus | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 96.32 | 82.59 | 79.71 | 0.21803 | 0.25427 | 0.26346 | 2.53790 | 2.42016 | 8.37245 | 6.64901 | 5.07963 | 16.35245 | 25.05916 |
| 1996 | 96.13 | 82.43 | 79.56 | 0.21845 | 0.25477 | 0.26397 | 2.54281 | 2.42484 | 8.38865 | 6.66187 | 5.08946 | 16.38408 | 25.10763 |
| 1997 | 95.92 | 82.25 | 79.38 | 0.21894 | 0.25533 | 0.26455 | 2.54848 | 2.43025 | 8.40735 | 6.67673 | 5.10081 | 16.42061 | 25.16361 |
| 1998 | 95.67 | 82.03 | 79.18 | 0.21950 | 0.25599 | 0.26523 | 2.55503 | 2.43650 | 8.42896 | 6.69389 | 5.11392 | 16.46282 | 25.22830 |
| 1999 | 95.39 | 81.79 | 78.94 | 0.22016 | 0.25675 | 0.26602 | 2.56261 | 2.44372 | 8.45396 | 6.71374 | 5.12908 | 16.51163 | 25.30310 |
| 2000 | 95.06 | 81.51 | 78.67 | 0.22091 | 0.25763 | 0.26693 | 2.57137 | 2.45208 | 8.48288 | 6.73671 | 5.14663 | 16.56812 | 25.38967 |
| 2001 | 94.69 | 81.19 | 78.36 | 0.22178 | 0.25865 | 0.26799 | 2.58153 | 2.46177 | 8.51639 | 6.76332 | 5.16696 | 16.63357 | 25.48996 |
| 2002 | 94.26 | 80.82 | 78.01 | 0.22279 | 0.25983 | 0.26921 | 2.59331 | 2.47300 | 8.55525 | 6.79418 | 5.19054 | 16.70947 | 25.60628 |
| 2003 | 93.76 | 80.40 | 77.60 | 0.22397 | 0.26120 | 0.27063 | 2.60699 | 2.48605 | 8.60038 | 6.83002 | 5.21792 | 16.79762 | 25.74136 |
| 2004 | 93.19 | 79.91 | 77.13 | 0.22534 | 0.26279 | 0.27228 | 2.62290 | 2.50122 | 8.65288 | 6.87171 | 5.24977 | 16.90015 | 25.89848 |
| 2005 | 92.54 | 79.35 | 76.59 | 0.22693 | 0.26465 | 0.27421 | 2.64145 | 2.51890 | 8.71405 | 6.92029 | 5.28688 | 17.01962 | 26.08156 |
| 2006 | 91.79 | 78.71 | 75.96 | 0.22879 | 0.26682 | 0.27645 | 2.66309 | 2.53955 | 8.78547 | 6.97701 | 5.33021 | 17.15912 | 26.29533 |
| 2007 | 90.92 | 77.96 | 75.25 | 0.23097 | 0.26936 | 0.27908 | 2.68843 | 2.56371 | 8.86906 | 7.04339 | 5.38093 | 17.32239 | 26.54553 |
| 2008 | 89.93 | 77.11 | 74.42 | 0.23352 | 0.27234 | 0.28217 | 2.71818 | 2.59208 | 8.96718 | 7.12132 | 5.44046 | 17.51403 | 26.83921 |
| 2009 | 88.78 | 76.13 | 73.48 | 0.23653 | 0.27585 | 0.28581 | 2.75321 | 2.62548 | 9.08274 | 7.21309 | 5.51057 | 17.73973 | 27.18509 |
| 2010 | 87.47 | 75.00 | 72.39 | 0.24009 | 0.28000 | 0.29011 | 2.79462 | 2.66498 | 9.21937 | 7.32160 | 5.59346 | 18.00659 | 27.59403 |

FUENTE: Elaboración propia

Cuadro N° A.5.52

**COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 15%, TRAMO
2. SITUACIÓN CON PROYECTO
(km 42-88)**

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobus | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobus | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobus | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 96.59 | 82.83 | 79.94 | 0.47622 | 0.55537 | 0.57543 | 5.54316 | 5.28600 | 18.28671 | 14.52245 | 11.09469 | 35.71623 | 54.73301 |
| 1996 | 96.45 | 82.70 | 79.82 | 0.47693 | 0.55620 | 0.57629 | 5.55144 | 5.29390 | 18.31404 | 14.54415 | 11.11127 | 35.76960 | 54.81479 |
| 1997 | 96.28 | 82.56 | 79.68 | 0.47775 | 0.55716 | 0.57728 | 5.56100 | 5.30301 | 18.34556 | 14.56919 | 11.13039 | 35.83117 | 54.90915 |
| 1998 | 96.09 | 82.40 | 79.53 | 0.47870 | 0.55827 | 0.57843 | 5.57203 | 5.31353 | 18.38195 | 14.59808 | 11.15247 | 35.90224 | 55.01806 |
| 1999 | 95.88 | 82.21 | 79.34 | 0.47979 | 0.55954 | 0.57975 | 5.58477 | 5.32568 | 18.42397 | 14.63146 | 11.17797 | 35.98433 | 55.14385 |
| 2000 | 95.62 | 81.99 | 79.14 | 0.48106 | 0.56102 | 0.58128 | 5.59949 | 5.33972 | 18.47254 | 14.67003 | 11.20743 | 36.07918 | 55.28921 |
| 2001 | 95.33 | 81.75 | 78.90 | 0.48252 | 0.56272 | 0.58304 | 5.61652 | 5.35596 | 18.52871 | 14.71464 | 11.24151 | 36.18889 | 55.45733 |
| 2002 | 95.00 | 81.46 | 78.62 | 0.48421 | 0.56470 | 0.58509 | 5.63622 | 5.37475 | 18.59373 | 14.76627 | 11.28096 | 36.31588 | 55.65194 |
| 2003 | 94.62 | 81.13 | 78.30 | 0.48617 | 0.56699 | 0.58746 | 5.65906 | 5.39653 | 18.66907 | 14.82610 | 11.32667 | 36.46303 | 55.87743 |
| 2004 | 94.18 | 80.75 | 77.94 | 0.48845 | 0.56964 | 0.59021 | 5.68555 | 5.42179 | 18.75647 | 14.89551 | 11.37969 | 36.63373 | 56.13901 |
| 2005 | 93.67 | 80.32 | 77.52 | 0.49109 | 0.57272 | 0.59340 | 5.71633 | 5.45114 | 18.85799 | 14.97613 | 11.44129 | 36.83202 | 56.44288 |
| 2006 | 93.09 | 79.82 | 77.04 | 0.49417 | 0.57631 | 0.59712 | 5.75213 | 5.48528 | 18.97611 | 15.06994 | 11.51295 | 37.06272 | 56.79642 |
| 2007 | 92.41 | 79.24 | 76.48 | 0.49776 | 0.58049 | 0.60145 | 5.79387 | 5.52508 | 19.11379 | 15.17928 | 11.59648 | 37.33163 | 57.20851 |
| 2008 | 91.64 | 78.58 | 75.84 | 0.50194 | 0.58538 | 0.60651 | 5.84262 | 5.57157 | 19.27462 | 15.30700 | 11.69406 | 37.64574 | 57.68986 |
| 2009 | 90.76 | 77.82 | 75.11 | 0.50685 | 0.59110 | 0.61244 | 5.89970 | 5.62601 | 19.46294 | 15.45656 | 11.80832 | 38.01356 | 58.25353 |
| 2010 | 89.74 | 76.95 | 74.27 | 0.51261 | 0.59781 | 0.61940 | 5.96675 | 5.68994 | 19.68412 | 15.63221 | 11.94251 | 38.44555 | 58.91552 |

FUENTE: Elaboración propia

Cuadro N° A.5.53

**COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 15%, TRAMO
3. SITUACIÓN CON PROYECTO
(km 88-103)**

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobus | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobus | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobus | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 96.43 | 82.69 | 79.81 | 0.15555 | 0.18140 | 0.18796 | 1.81060 | 1.72660 | 5.97310 | 4.74356 | 3.62393 | 11.66621 | 17.87778 |
| 1996 | 96.26 | 82.54 | 79.67 | 0.15582 | 0.18172 | 0.18828 | 1.81377 | 1.72962 | 5.98356 | 4.75186 | 3.63027 | 11.68663 | 17.90907 |
| 1997 | 96.07 | 82.38 | 79.51 | 0.15614 | 0.18209 | 0.18866 | 1.81742 | 1.73311 | 5.99562 | 4.76144 | 3.63759 | 11.71020 | 17.94519 |
| 1998 | 95.85 | 82.19 | 79.32 | 0.15650 | 0.18251 | 0.18910 | 1.82165 | 1.73714 | 6.00956 | 4.77251 | 3.64605 | 11.73743 | 17.98691 |
| 1999 | 95.59 | 81.97 | 79.11 | 0.15692 | 0.18300 | 0.18961 | 1.82653 | 1.74180 | 6.02567 | 4.78531 | 3.65582 | 11.76889 | 18.03513 |
| 2000 | 95.30 | 81.71 | 78.87 | 0.15740 | 0.18357 | 0.19020 | 1.83218 | 1.74718 | 6.04430 | 4.80010 | 3.66713 | 11.80528 | 18.09089 |
| 2001 | 94.96 | 81.42 | 78.59 | 0.15797 | 0.18422 | 0.19087 | 1.83872 | 1.75342 | 6.06588 | 4.81723 | 3.68021 | 11.84741 | 18.15546 |
| 2002 | 94.57 | 81.09 | 78.26 | 0.15862 | 0.18498 | 0.19166 | 1.84630 | 1.76064 | 6.09087 | 4.83709 | 3.69538 | 11.89624 | 18.23028 |
| 2003 | 94.12 | 80.70 | 77.89 | 0.15937 | 0.18586 | 0.19257 | 1.85509 | 1.76903 | 6.11988 | 4.86012 | 3.71298 | 11.95288 | 18.31709 |
| 2004 | 93.60 | 80.26 | 77.47 | 0.16025 | 0.18689 | 0.19363 | 1.86530 | 1.77877 | 6.15357 | 4.88688 | 3.73342 | 12.01870 | 18.41794 |
| 2005 | 93.01 | 79.75 | 76.97 | 0.16127 | 0.18808 | 0.19487 | 1.87719 | 1.79010 | 6.19279 | 4.91802 | 3.75721 | 12.09529 | 18.53531 |
| 2006 | 92.33 | 79.17 | 76.41 | 0.16246 | 0.18947 | 0.19631 | 1.89105 | 1.80332 | 6.23850 | 4.95433 | 3.78495 | 12.18458 | 18.67214 |
| 2007 | 91.55 | 78.50 | 75.76 | 0.16385 | 0.19109 | 0.19799 | 1.90724 | 1.81876 | 6.29192 | 4.99675 | 3.81736 | 12.28891 | 18.83202 |
| 2008 | 90.64 | 77.73 | 75.02 | 0.16548 | 0.19299 | 0.19996 | 1.92621 | 1.83685 | 6.35449 | 5.04644 | 3.85532 | 12.41112 | 19.01930 |
| 2009 | 89.61 | 76.84 | 74.16 | 0.16740 | 0.19522 | 0.20227 | 1.94849 | 1.85810 | 6.42801 | 5.10482 | 3.89992 | 12.55470 | 19.23934 |
| 2010 | 88.42 | 75.81 | 73.17 | 0.16965 | 0.19785 | 0.20500 | 1.97476 | 1.88315 | 6.51468 | 5.17365 | 3.95251 | 12.72398 | 19.49875 |

FUENTE: Elaboración propia

Cuadro N° A.5.54

**COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 15%, TRAMO
4. SITUACIÓN CON PROYECTO
(km 103-112)**

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobus | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobus | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobus | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 95.76 | 82.11 | 79.25 | 0.09399 | 0.10961 | 0.11357 | 1.09399 | 1.04323 | 3.60903 | 2.86612 | 2.18963 | 7.04888 | 10.80200 |
| 1996 | 95.49 | 81.88 | 79.03 | 0.09425 | 0.10992 | 0.11389 | 1.09707 | 1.04618 | 3.61921 | 2.87421 | 2.19580 | 7.06877 | 10.83247 |
| 1997 | 95.18 | 81.61 | 78.77 | 0.09456 | 0.11027 | 0.11426 | 1.10064 | 1.04958 | 3.63099 | 2.88356 | 2.20295 | 7.09177 | 10.86772 |
| 1998 | 94.82 | 81.31 | 78.48 | 0.09491 | 0.11069 | 0.11469 | 1.10478 | 1.05353 | 3.64463 | 2.89439 | 2.21122 | 7.11841 | 10.90855 |
| 1999 | 94.41 | 80.96 | 78.14 | 0.09532 | 0.11117 | 0.11518 | 1.10957 | 1.05810 | 3.66044 | 2.90695 | 2.22082 | 7.14930 | 10.95588 |
| 2000 | 93.94 | 80.55 | 77.75 | 0.09580 | 0.11173 | 0.11576 | 1.11514 | 1.06340 | 3.67880 | 2.92153 | 2.23195 | 7.18515 | 11.01082 |
| 2001 | 93.40 | 80.09 | 77.30 | 0.09636 | 0.11237 | 0.11643 | 1.12160 | 1.06957 | 3.70014 | 2.93848 | 2.24490 | 7.22683 | 11.07469 |
| 2002 | 92.78 | 79.56 | 76.78 | 0.09700 | 0.11313 | 0.11721 | 1.12914 | 1.07675 | 3.72498 | 2.95821 | 2.25998 | 7.27536 | 11.14906 |
| 2003 | 92.06 | 78.94 | 76.19 | 0.09776 | 0.11401 | 0.11813 | 1.13792 | 1.08513 | 3.75397 | 2.98123 | 2.27756 | 7.33198 | 11.23583 |
| 2004 | 91.24 | 78.23 | 75.51 | 0.09864 | 0.11504 | 0.11919 | 1.14820 | 1.09493 | 3.78788 | 3.00815 | 2.29813 | 7.39820 | 11.33730 |
| 2005 | 90.29 | 77.42 | 74.72 | 0.09968 | 0.11625 | 0.12044 | 1.16025 | 1.10642 | 3.82763 | 3.03972 | 2.32225 | 7.47584 | 11.45628 |
| 2006 | 89.20 | 76.49 | 73.82 | 0.10090 | 0.11767 | 0.12192 | 1.17442 | 1.11994 | 3.87439 | 3.07686 | 2.35062 | 7.56716 | 11.59623 |
| 2007 | 87.95 | 75.41 | 72.78 | 0.10233 | 0.11934 | 0.12365 | 1.19116 | 1.13590 | 3.92959 | 3.12070 | 2.38411 | 7.67499 | 11.76146 |
| 2008 | 86.51 | 74.18 | 71.59 | 0.10404 | 0.12133 | 0.12571 | 1.21100 | 1.15482 | 3.99506 | 3.17269 | 2.42383 | 7.80284 | 11.95740 |
| 2009 | 84.85 | 72.76 | 70.22 | 0.10607 | 0.12370 | 0.12817 | 1.23465 | 1.17738 | 4.07309 | 3.23466 | 2.47117 | 7.95525 | 12.19095 |
| 2010 | 82.94 | 71.12 | 68.64 | 0.10851 | 0.12654 | 0.13111 | 1.26302 | 1.20443 | 4.16668 | 3.30898 | 2.52796 | 8.13805 | 12.47107 |

FUENTE: Elaboración propia

Cuadro N° A.5.55
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 15%, TRAMO
5. SITUACIÓN CON PROYECTO
(km 112-115)

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobus | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobus | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobus | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 96.47 | 82.72 | 79.83 | 0.03110 | 0.03627 | 0.03758 | 0.36199 | 0.34520 | 1.19419 | 0.94837 | 0.72453 | 2.33241 | 3.57428 |
| 1996 | 96.30 | 82.58 | 79.70 | 0.03115 | 0.03633 | 0.03764 | 0.36260 | 0.34578 | 1.19622 | 0.94998 | 0.72576 | 2.33637 | 3.58034 |
| 1997 | 96.12 | 82.42 | 79.54 | 0.03121 | 0.03640 | 0.03772 | 0.36331 | 0.34646 | 1.19856 | 0.95184 | 0.72717 | 2.34093 | 3.58734 |
| 1998 | 95.90 | 82.23 | 79.37 | 0.03128 | 0.03648 | 0.03780 | 0.36413 | 0.34724 | 1.20126 | 0.95398 | 0.72881 | 2.34620 | 3.59542 |
| 1999 | 95.65 | 82.02 | 79.16 | 0.03136 | 0.03658 | 0.03790 | 0.36508 | 0.34814 | 1.20438 | 0.95646 | 0.73070 | 2.35230 | 3.60476 |
| 2000 | 95.37 | 81.77 | 78.92 | 0.03146 | 0.03669 | 0.03801 | 0.36617 | 0.34918 | 1.20798 | 0.95932 | 0.73289 | 2.35934 | 3.61556 |
| 2001 | 95.04 | 81.49 | 78.65 | 0.03157 | 0.03681 | 0.03814 | 0.36744 | 0.35039 | 1.21216 | 0.96264 | 0.73543 | 2.36750 | 3.62805 |
| 2002 | 94.66 | 81.17 | 78.34 | 0.03169 | 0.03696 | 0.03830 | 0.36890 | 0.35179 | 1.21700 | 0.96648 | 0.73836 | 2.37695 | 3.64253 |
| 2003 | 94.22 | 80.80 | 77.98 | 0.03184 | 0.03713 | 0.03847 | 0.37060 | 0.35341 | 1.22261 | 0.97094 | 0.74177 | 2.38791 | 3.65933 |
| 2004 | 93.73 | 80.37 | 77.57 | 0.03201 | 0.03733 | 0.03868 | 0.37258 | 0.35529 | 1.22913 | 0.97611 | 0.74572 | 2.40064 | 3.67883 |
| 2005 | 93.15 | 79.87 | 77.09 | 0.03221 | 0.03756 | 0.03892 | 0.37488 | 0.35749 | 1.23671 | 0.98214 | 0.75032 | 2.41544 | 3.70153 |
| 2006 | 92.49 | 79.31 | 76.54 | 0.03244 | 0.03783 | 0.03919 | 0.37756 | 0.36004 | 1.24554 | 0.98915 | 0.75568 | 2.43270 | 3.72797 |
| 2007 | 91.73 | 78.66 | 75.91 | 0.03270 | 0.03814 | 0.03952 | 0.38068 | 0.36302 | 1.25586 | 0.99735 | 0.76194 | 2.45285 | 3.75885 |
| 2008 | 90.86 | 77.91 | 75.19 | 0.03302 | 0.03851 | 0.03990 | 0.38434 | 0.36651 | 1.26794 | 1.00694 | 0.76927 | 2.47644 | 3.79500 |
| 2009 | 89.85 | 77.04 | 74.36 | 0.03339 | 0.03894 | 0.04034 | 0.38864 | 0.37061 | 1.28212 | 1.01820 | 0.77787 | 2.50414 | 3.83745 |
| 2010 | 88.70 | 76.05 | 73.40 | 0.03382 | 0.03945 | 0.04087 | 0.39371 | 0.37544 | 1.29883 | 1.03147 | 0.78801 | 2.53677 | 3.88745 |

FUENTE: Elaboración propia

Cuadro N° A.5.56
PROYECTO AMPLIACIÓN A UN 3^{er} CARRIL VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 15%. TRAMO 1

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 2.68486 | 2.53790 | 0.14696 | 2.56031 | 2.42016 | 0.14015 | 7.03404 | 6.64901 | 0.38503 | 5.37378 | 5.07963 | 0.29415 | 8.85729 | 8.37245 | 0.48483 | 17.29939 | 16.35245 | 0.94694 |
| 1996 | 2.73053 | 2.54281 | 0.18772 | 2.60385 | 2.42484 | 0.17901 | 7.15367 | 6.66187 | 0.49180 | 5.46518 | 5.08946 | 0.37572 | 9.00793 | 8.38865 | 0.61928 | 17.59360 | 16.38408 | 1.20952 |
| 1997 | 2.78500 | 2.54848 | 0.23652 | 2.65580 | 2.43025 | 0.22555 | 7.29638 | 6.67673 | 0.61965 | 5.57420 | 5.10081 | 0.47340 | 9.18762 | 8.40735 | 0.78027 | 17.94457 | 16.42061 | 1.52396 |
| 1998 | 2.84922 | 2.55503 | 0.29419 | 2.71704 | 2.43650 | 0.28054 | 7.46464 | 6.69389 | 0.77075 | 5.70274 | 5.11392 | 0.58883 | 9.39949 | 8.42896 | 0.97053 | 18.35839 | 16.46282 | 1.89557 |
| 1999 | 2.91658 | 2.56261 | 0.35397 | 2.78127 | 2.44372 | 0.33755 | 7.64110 | 6.71374 | 0.92736 | 5.83755 | 5.12908 | 0.70847 | 9.62169 | 8.45396 | 1.16774 | 18.79237 | 16.51163 | 2.28073 |
| 2000 | 2.99808 | 2.57137 | 0.42671 | 2.85899 | 2.45208 | 0.40691 | 7.85463 | 6.73671 | 1.11792 | 6.00068 | 5.14663 | 0.85406 | 9.89057 | 8.48288 | 1.40769 | 19.31752 | 16.56812 | 2.74939 |
| 2001 | 3.09763 | 2.58153 | 0.51610 | 2.95392 | 2.46177 | 0.49215 | 8.11543 | 6.76332 | 1.35211 | 6.19993 | 5.16696 | 1.03297 | 10.21897 | 8.51639 | 1.70258 | 19.95893 | 16.63357 | 3.32536 |
| 2002 | 3.25182 | 2.59331 | 0.65851 | 3.10096 | 2.47300 | 0.62796 | 8.51940 | 6.79418 | 1.72522 | 6.50855 | 5.19054 | 1.31801 | 10.72765 | 8.55525 | 2.17240 | 20.95245 | 16.70947 | 4.24298 |
| 2003 | 3.46707 | 2.60699 | 0.86008 | 3.30623 | 2.48605 | 0.82018 | 9.08333 | 6.83002 | 2.25331 | 6.93937 | 5.21792 | 1.72145 | 11.43775 | 8.60038 | 2.83737 | 22.33936 | 16.79762 | 5.54174 |
| 2004 | 3.75274 | 2.62290 | 1.12983 | 3.57864 | 2.50122 | 1.07742 | 9.83175 | 6.87171 | 2.96004 | 7.51114 | 5.24977 | 2.26137 | 12.38016 | 8.65288 | 3.72729 | 24.18001 | 16.90015 | 7.27985 |
| 2005 | 4.00416 | 2.64145 | 1.36271 | 3.81840 | 2.51890 | 1.29949 | 10.49044 | 6.92029 | 3.57015 | 8.01436 | 5.28688 | 2.72748 | 13.20959 | 8.71405 | 4.49555 | 25.79998 | 17.01962 | 8.78036 |
| 2006 | 4.29720 | 2.66309 | 1.63411 | 4.09785 | 2.53955 | 1.55830 | 11.25818 | 6.97701 | 4.28118 | 8.60089 | 5.33021 | 3.27068 | 14.17633 | 8.78547 | 5.39087 | 27.68815 | 17.15912 | 10.52904 |
| 2007 | 4.69210 | 2.68843 | 2.00367 | 4.47443 | 2.56371 | 1.91071 | 12.29277 | 7.04339 | 5.24938 | 9.39129 | 5.38093 | 4.01036 | 15.47910 | 8.86906 | 6.61004 | 30.23261 | 17.32239 | 12.91023 |
| 2008 | 5.24657 | 2.71818 | 2.52839 | 5.00317 | 2.59208 | 2.41109 | 13.74541 | 7.12132 | 6.62409 | 10.50105 | 5.44046 | 5.06059 | 17.30826 | 8.96718 | 8.34108 | 33.80520 | 17.51403 | 16.29117 |
| 2009 | 6.07168 | 2.75321 | 3.31847 | 5.79000 | 2.62548 | 3.16452 | 15.90711 | 7.21309 | 8.69402 | 12.15253 | 5.51057 | 6.64196 | 20.03028 | 9.08274 | 10.94754 | 39.12165 | 17.73973 | 21.38191 |
| 2010 | 7.41224 | 2.79462 | 4.61761 | 7.06837 | 2.66498 | 4.40340 | 19.41922 | 7.32160 | 12.09763 | 14.83566 | 5.59346 | 9.24220 | 24.45274 | 9.21937 | 15.23337 | 47.75926 | 18.00659 | 29.75267 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.46 y A. 5.51

Cuadro N° A.5.57
PROYECTO AMPLIACIÓN A UN 3^{er} CARRIL VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 15%. TRAMO 2

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 5.93277 | 5.54316 | 0.38961 | 5.65754 | 5.28600 | 0.37154 | 15.54319 | 14.52245 | 1.02074 | 11.87450 | 11.09469 | 0.77982 | 19.57203 | 18.28671 | 1.28532 | 38.22663 | 35.71623 | 2.51040 |
| 1996 | 5.99092 | 5.55144 | 0.43948 | 5.71299 | 5.29390 | 0.41909 | 15.69554 | 14.54415 | 1.15139 | 11.99089 | 11.11127 | 0.87962 | 19.76387 | 18.31404 | 1.44983 | 38.60130 | 35.76960 | 2.83170 |
| 1997 | 6.05922 | 5.56100 | 0.49822 | 5.77812 | 5.30301 | 0.47511 | 15.87447 | 14.56919 | 1.30528 | 12.12759 | 11.13039 | 0.99719 | 19.98918 | 18.34556 | 1.64361 | 39.04136 | 35.83117 | 3.21018 |
| 1998 | 6.13971 | 5.57203 | 0.56768 | 5.85488 | 5.31353 | 0.54135 | 16.08535 | 14.59808 | 1.48726 | 12.28869 | 11.15247 | 1.13622 | 20.25472 | 18.38195 | 1.87277 | 39.55999 | 35.90224 | 3.65775 |
| 1999 | 6.16143 | 5.58477 | 0.57666 | 5.87559 | 5.32568 | 0.54991 | 16.14225 | 14.63146 | 1.51080 | 12.33217 | 11.17797 | 1.15420 | 20.32637 | 18.42397 | 1.90240 | 39.69995 | 35.98433 | 3.71562 |
| 2000 | 6.24266 | 5.59949 | 0.64317 | 5.95305 | 5.33972 | 0.61333 | 16.35507 | 14.67003 | 1.68504 | 12.49475 | 11.20743 | 1.28731 | 20.59435 | 18.47254 | 2.12180 | 40.22333 | 36.07918 | 4.14415 |
| 2001 | 6.34681 | 5.61652 | 0.73029 | 6.05237 | 5.35596 | 0.69641 | 16.62792 | 14.71464 | 1.91329 | 12.70320 | 11.24151 | 1.46169 | 20.93793 | 18.52871 | 2.40922 | 40.89439 | 36.18889 | 4.70550 |
| 2002 | 6.46766 | 5.63622 | 0.83144 | 6.16761 | 5.37475 | 0.79286 | 16.94454 | 14.76627 | 2.17827 | 12.94508 | 11.28096 | 1.66413 | 21.33661 | 18.59373 | 2.74288 | 41.67307 | 36.31588 | 5.35719 |
| 2003 | 6.60860 | 5.65906 | 0.94953 | 6.30201 | 5.39653 | 0.90548 | 17.31377 | 14.82610 | 2.48767 | 13.22717 | 11.32667 | 1.90050 | 21.80155 | 18.66907 | 3.13248 | 42.58115 | 36.46303 | 6.11813 |
| 2004 | 6.77392 | 5.68555 | 1.08836 | 6.45966 | 5.42179 | 1.03787 | 17.74690 | 14.89551 | 2.85139 | 13.55806 | 11.37969 | 2.17837 | 22.34694 | 18.75647 | 3.59048 | 43.64637 | 36.63373 | 7.01265 |
| 2005 | 7.02204 | 5.71633 | 1.30571 | 6.69628 | 5.45114 | 1.24514 | 18.39696 | 14.97613 | 3.42082 | 14.05469 | 11.44129 | 2.61340 | 23.16550 | 18.85799 | 4.30751 | 45.24512 | 36.83202 | 8.41311 |
| 2006 | 7.38080 | 5.75213 | 1.62866 | 7.03839 | 5.48528 | 1.55311 | 19.33685 | 15.06994 | 4.26691 | 14.77274 | 11.51295 | 3.25978 | 24.34902 | 18.97611 | 5.37291 | 47.55668 | 37.06272 | 10.49396 |
| 2007 | 7.82876 | 5.79387 | 2.03489 | 7.46557 | 5.52508 | 1.94049 | 20.51047 | 15.17928 | 5.33119 | 15.66934 | 11.59648 | 4.07286 | 25.82684 | 19.11379 | 6.71305 | 50.44305 | 37.33163 | 13.11142 |
| 2008 | 8.36625 | 5.84262 | 2.52363 | 7.97813 | 5.57157 | 2.40656 | 21.91863 | 15.30700 | 6.61163 | 16.74513 | 11.69406 | 5.05107 | 27.60000 | 19.27462 | 8.32538 | 53.90625 | 37.64574 | 16.26051 |
| 2009 | 9.14693 | 5.89970 | 3.24722 | 8.72258 | 5.62601 | 3.09658 | 23.96391 | 15.45656 | 8.50735 | 18.30766 | 11.80832 | 6.49934 | 30.17542 | 19.46294 | 10.71248 | 58.93637 | 38.01356 | 20.92281 |
| 2010 | 10.15904 | 5.96675 | 4.19229 | 9.68774 | 5.68994 | 3.99780 | 26.61553 | 15.63221 | 10.98333 | 20.33342 | 11.94251 | 8.39091 | 33.51436 | 19.68412 | 13.83024 | 65.45773 | 38.44555 | 27.01218 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.47 y A. 5.52

Cuadro N° A.5.58
PROYECTO AMPLIACIÓN A UN 3^{er} CARRIL VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 15%. TRAMO 3

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.95289 | 1.81060 | 0.14229 | 1.86229 | 1.72660 | 0.13569 | 5.11635 | 4.74356 | 0.37280 | 3.90873 | 3.62393 | 0.28480 | 6.44253 | 5.97310 | 0.46943 | 12.58306 | 11.66621 | 0.91685 |
| 1996 | 1.97489 | 1.81377 | 0.16112 | 1.88327 | 1.72962 | 0.15365 | 5.17398 | 4.75186 | 0.42212 | 3.95276 | 3.63027 | 0.32249 | 6.51509 | 5.98356 | 0.53154 | 12.72479 | 11.68663 | 1.03816 |
| 1997 | 2.00080 | 1.81742 | 0.18338 | 1.90798 | 1.73311 | 0.17487 | 5.24188 | 4.76144 | 0.48043 | 4.00463 | 3.63759 | 0.36704 | 6.60059 | 5.99562 | 0.60496 | 12.89177 | 11.71020 | 1.18157 |
| 1998 | 2.03164 | 1.82165 | 0.20999 | 1.93739 | 1.73714 | 0.20025 | 5.32266 | 4.77251 | 0.55015 | 4.06634 | 3.64605 | 0.42030 | 6.70231 | 6.00956 | 0.69275 | 13.09046 | 11.73743 | 1.35303 |
| 1999 | 2.07347 | 1.82653 | 0.24694 | 1.97728 | 1.74180 | 0.23549 | 5.43226 | 4.78531 | 0.64696 | 4.15008 | 3.65582 | 0.49426 | 6.84032 | 6.02567 | 0.81465 | 13.36001 | 11.76889 | 1.59112 |
| 2000 | 2.12376 | 1.83218 | 0.29158 | 2.02524 | 1.74718 | 0.27806 | 5.56402 | 4.80010 | 0.76392 | 4.25073 | 3.66713 | 0.58361 | 7.00623 | 6.04430 | 0.96193 | 13.68404 | 11.80528 | 1.87876 |
| 2001 | 2.18470 | 1.83872 | 0.34598 | 2.08335 | 1.75342 | 0.32993 | 5.72367 | 4.81723 | 0.90643 | 4.37270 | 3.68021 | 0.69249 | 7.20726 | 6.06588 | 1.14138 | 14.07668 | 11.84741 | 2.22927 |
| 2002 | 2.26962 | 1.84630 | 0.42332 | 2.16433 | 1.76064 | 0.40369 | 5.94615 | 4.83709 | 1.10906 | 4.54267 | 3.69538 | 0.84729 | 7.48741 | 6.09087 | 1.39653 | 14.62384 | 11.89624 | 2.72761 |
| 2003 | 2.41146 | 1.85509 | 0.55638 | 2.29959 | 1.76903 | 0.53057 | 6.31776 | 4.86012 | 1.45765 | 4.82657 | 3.71298 | 1.11359 | 7.95535 | 6.11988 | 1.83547 | 15.53779 | 11.95288 | 3.58490 |
| 2004 | 2.59820 | 1.86530 | 0.73290 | 2.47767 | 1.77877 | 0.69890 | 6.80699 | 4.88688 | 1.92011 | 5.20032 | 3.73342 | 1.46690 | 8.57138 | 6.15357 | 2.41781 | 16.74099 | 12.01870 | 4.72229 |
| 2005 | 2.78884 | 1.87719 | 0.91165 | 2.65946 | 1.79010 | 0.86936 | 7.30644 | 4.91802 | 2.38842 | 5.58189 | 3.75721 | 1.82467 | 9.20029 | 6.19279 | 3.00750 | 17.96931 | 12.09529 | 5.87403 |
| 2006 | 2.95119 | 1.89105 | 1.06014 | 2.81428 | 1.80332 | 1.01096 | 7.73178 | 4.95433 | 2.77745 | 5.90683 | 3.78495 | 2.12188 | 9.73588 | 6.23850 | 3.49738 | 19.01539 | 12.18458 | 6.83081 |
| 2007 | 3.16294 | 1.90724 | 1.25570 | 3.01620 | 1.81876 | 1.19744 | 8.28654 | 4.99675 | 3.28979 | 6.33065 | 3.81736 | 2.51329 | 10.43443 | 6.29192 | 4.14251 | 20.37975 | 12.28891 | 8.09084 |
| 2008 | 3.44739 | 1.92621 | 1.52118 | 3.28746 | 1.83685 | 1.45061 | 9.03177 | 5.04644 | 3.98533 | 6.89999 | 3.85532 | 3.04467 | 11.37283 | 6.35449 | 5.01834 | 22.21257 | 12.41112 | 9.80145 |
| 2009 | 3.84506 | 1.94849 | 1.89657 | 3.66668 | 1.85810 | 1.80858 | 10.07362 | 5.10482 | 4.96880 | 7.69592 | 3.89992 | 3.79600 | 12.68473 | 6.42801 | 6.25673 | 24.77487 | 12.55470 | 12.22017 |
| 2010 | 4.43315 | 1.97476 | 2.45838 | 4.22748 | 1.88315 | 2.34434 | 11.61434 | 5.17365 | 6.44069 | 8.87298 | 3.95251 | 4.92048 | 14.62481 | 6.51468 | 8.11013 | 28.56408 | 12.72398 | 15.84010 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.48 y A. 5.53

Cuadro N° A.5.59
PROYECTO AMPLIACIÓN A UN 3^{er} CARRIL VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 15%. TRAMO 4

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.19398 | 1.09399 | 0.09999 | 1.13859 | 1.04323 | 0.09535 | 3.12809 | 2.86612 | 0.26197 | 2.38976 | 2.18963 | 0.20013 | 3.93890 | 3.60903 | 0.32987 | 7.69316 | 7.04888 | 0.64427 |
| 1996 | 1.20836 | 1.09707 | 0.11129 | 1.15231 | 1.04618 | 0.10613 | 3.16578 | 2.87421 | 0.29157 | 2.41855 | 2.19580 | 0.22275 | 3.98636 | 3.61921 | 0.36715 | 7.78585 | 7.06877 | 0.71708 |
| 1997 | 1.22601 | 1.10064 | 0.12536 | 1.16913 | 1.04958 | 0.11955 | 3.21200 | 2.88356 | 0.32844 | 2.45386 | 2.20295 | 0.25091 | 4.04455 | 3.63099 | 0.41357 | 7.89952 | 7.09177 | 0.80775 |
| 1998 | 1.24803 | 1.10478 | 0.14325 | 1.19013 | 1.05353 | 0.13660 | 3.26969 | 2.89439 | 0.37530 | 2.49794 | 2.21122 | 0.28672 | 4.11720 | 3.64463 | 0.47258 | 8.04141 | 7.11841 | 0.92300 |
| 1999 | 1.27435 | 1.10957 | 0.16478 | 1.21523 | 1.05810 | 0.15714 | 3.33866 | 2.90695 | 0.43170 | 2.55063 | 2.22082 | 0.32981 | 4.20404 | 3.66044 | 0.54360 | 8.21102 | 7.14930 | 1.06172 |
| 2000 | 1.30603 | 1.11514 | 0.19089 | 1.24544 | 1.06340 | 0.18204 | 3.42165 | 2.92153 | 0.50012 | 2.61403 | 2.23195 | 0.38208 | 4.30855 | 3.67880 | 0.62976 | 8.41514 | 7.18515 | 1.22999 |
| 2001 | 1.34528 | 1.12160 | 0.22367 | 1.28287 | 1.06957 | 0.21330 | 3.52447 | 2.93848 | 0.58600 | 2.69258 | 2.24490 | 0.44768 | 4.43802 | 3.70014 | 0.73789 | 8.66801 | 7.22883 | 1.44119 |
| 2002 | 1.42143 | 1.12914 | 0.29229 | 1.35549 | 1.07675 | 0.27873 | 3.72398 | 2.95821 | 0.76578 | 2.84501 | 2.25998 | 0.58503 | 4.68925 | 3.72498 | 0.96427 | 9.15870 | 7.27536 | 1.88334 |
| 2003 | 1.52041 | 1.13792 | 0.38248 | 1.44987 | 1.08513 | 0.36474 | 3.98330 | 2.98123 | 1.00207 | 3.04311 | 2.27756 | 0.76555 | 5.01578 | 3.75397 | 1.26180 | 9.79644 | 7.33198 | 2.46446 |
| 2004 | 1.64377 | 1.14820 | 0.49557 | 1.56751 | 1.09493 | 0.47258 | 4.30649 | 3.00815 | 1.29834 | 3.29002 | 2.29813 | 0.99189 | 5.42275 | 3.78788 | 1.63487 | 10.59131 | 7.39820 | 3.19311 |
| 2005 | 1.71847 | 1.16025 | 0.55822 | 1.63875 | 1.10642 | 0.53232 | 4.50220 | 3.03972 | 1.46247 | 3.43953 | 2.32225 | 1.11728 | 5.66918 | 3.82763 | 1.84155 | 11.07261 | 7.47584 | 3.59678 |
| 2006 | 1.81323 | 1.17442 | 0.63880 | 1.72911 | 1.11994 | 0.60917 | 4.75045 | 3.07686 | 1.67360 | 3.62919 | 2.35062 | 1.27857 | 5.98178 | 3.87439 | 2.10740 | 11.68317 | 7.56716 | 4.11601 |
| 2007 | 1.93599 | 1.19116 | 0.74484 | 1.84618 | 1.13590 | 0.71028 | 5.07209 | 3.12070 | 1.95139 | 3.87491 | 2.38411 | 1.49080 | 6.38679 | 3.92959 | 2.45719 | 12.47419 | 7.67499 | 4.79921 |
| 2008 | 2.09946 | 1.21100 | 0.88846 | 2.00206 | 1.15482 | 0.84724 | 5.50035 | 3.17269 | 2.32767 | 4.20210 | 2.42383 | 1.77826 | 6.92606 | 3.99506 | 2.93101 | 13.52747 | 7.80284 | 5.72462 |
| 2009 | 2.32525 | 1.23465 | 1.09059 | 2.21738 | 1.17738 | 1.04000 | 6.09189 | 3.23466 | 2.85723 | 4.65401 | 2.47117 | 2.18283 | 7.67092 | 4.07309 | 3.59783 | 14.98227 | 7.95525 | 7.02702 |
| 2010 | 2.65341 | 1.26302 | 1.39039 | 2.53032 | 1.20443 | 1.32588 | 6.95164 | 3.30898 | 3.64266 | 5.31083 | 2.52796 | 2.78287 | 8.75352 | 4.16668 | 4.58684 | 17.09673 | 8.13805 | 8.95868 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.49 y A. 5.54

Cuadro N° A.5.60
PROYECTO AMPLIACIÓN A UN 3^{er} CARRIL VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 15%. TRAMO 5

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 0.37864 | 0.36199 | 0.01665 | 0.36107 | 0.34520 | 0.01588 | 0.99199 | 0.94837 | 0.04362 | 0.75785 | 0.72453 | 0.03332 | 1.24912 | 1.19419 | 0.05492 | 2.43968 | 2.33241 | 0.10727 |
| 1996 | 0.38411 | 0.36260 | 0.02151 | 0.36629 | 0.34578 | 0.02051 | 1.00633 | 0.94998 | 0.05635 | 0.76881 | 0.72576 | 0.04305 | 1.26718 | 1.19622 | 0.07096 | 2.47495 | 2.33637 | 0.13859 |
| 1997 | 0.39061 | 0.36331 | 0.02730 | 0.37249 | 0.34646 | 0.02603 | 1.02335 | 0.95184 | 0.07151 | 0.78181 | 0.72717 | 0.05463 | 1.28860 | 1.19856 | 0.09005 | 2.51680 | 2.34093 | 0.17587 |
| 1998 | 0.39835 | 0.36413 | 0.03422 | 0.37987 | 0.34724 | 0.03264 | 1.04364 | 0.95398 | 0.08966 | 0.79731 | 0.72881 | 0.06850 | 1.31416 | 1.20126 | 0.11290 | 2.56671 | 2.34620 | 0.22051 |
| 1999 | 0.40744 | 0.36508 | 0.04236 | 0.38854 | 0.34814 | 0.04039 | 1.06744 | 0.95646 | 0.11098 | 0.81549 | 0.73070 | 0.08478 | 1.34412 | 1.20438 | 0.13974 | 2.62524 | 2.35230 | 0.27294 |
| 2000 | 0.41714 | 0.36617 | 0.05097 | 0.39779 | 0.34918 | 0.04861 | 1.09286 | 0.95932 | 0.13354 | 0.83491 | 0.73289 | 0.10202 | 1.37614 | 1.20798 | 0.16815 | 2.68777 | 2.35934 | 0.32843 |
| 2001 | 0.42889 | 0.36744 | 0.06145 | 0.40899 | 0.35039 | 0.05860 | 1.12364 | 0.96264 | 0.16100 | 0.85843 | 0.73543 | 0.12300 | 1.41490 | 1.21216 | 0.20274 | 2.76347 | 2.36750 | 0.39597 |
| 2002 | 0.44325 | 0.36890 | 0.07434 | 0.42268 | 0.35179 | 0.07090 | 1.16126 | 0.96648 | 0.19477 | 0.88716 | 0.73836 | 0.14880 | 1.46226 | 1.21700 | 0.24526 | 2.85597 | 2.37695 | 0.47902 |
| 2003 | 0.46575 | 0.37060 | 0.09515 | 0.44415 | 0.35341 | 0.09073 | 1.22022 | 0.97094 | 0.24928 | 0.93221 | 0.74177 | 0.19044 | 1.53650 | 1.22261 | 0.31389 | 3.00098 | 2.38791 | 0.61307 |
| 2004 | 0.49681 | 0.37258 | 0.12423 | 0.47376 | 0.35529 | 0.11847 | 1.30159 | 0.97611 | 0.32548 | 0.99438 | 0.74572 | 0.24866 | 1.63897 | 1.22913 | 0.40984 | 3.20111 | 2.40064 | 0.80048 |
| 2005 | 0.53808 | 0.37488 | 0.16320 | 0.51312 | 0.35749 | 0.15563 | 1.40971 | 0.98214 | 0.42757 | 1.07697 | 0.75032 | 0.32665 | 1.77511 | 1.23671 | 0.53840 | 3.46701 | 2.41544 | 1.05156 |
| 2006 | 0.57353 | 0.37756 | 0.19597 | 0.54692 | 0.36004 | 0.18688 | 1.50258 | 0.98915 | 0.51343 | 1.14792 | 0.75568 | 0.39224 | 1.89205 | 1.24554 | 0.64651 | 3.69542 | 2.43270 | 1.26272 |
| 2007 | 0.61588 | 0.38068 | 0.23520 | 0.58731 | 0.36302 | 0.22429 | 1.61354 | 0.99735 | 0.61620 | 1.23270 | 0.76194 | 0.47075 | 2.03178 | 1.25586 | 0.77592 | 3.96832 | 2.45285 | 1.51546 |
| 2008 | 0.67304 | 0.38434 | 0.28870 | 0.64182 | 0.36651 | 0.27530 | 1.76329 | 1.00694 | 0.75635 | 1.34710 | 0.76927 | 0.57783 | 2.22034 | 1.26794 | 0.95240 | 4.33660 | 2.47644 | 1.86016 |
| 2009 | 0.75345 | 0.38864 | 0.36481 | 0.71850 | 0.37061 | 0.34789 | 1.97396 | 1.01820 | 0.95576 | 1.50804 | 0.77787 | 0.73017 | 2.48562 | 1.28212 | 1.20350 | 4.85473 | 2.50414 | 2.35059 |
| 2010 | 0.87347 | 0.39371 | 0.47976 | 0.83295 | 0.37544 | 0.45750 | 2.28839 | 1.03147 | 1.25692 | 1.74826 | 0.78801 | 0.96025 | 2.88154 | 1.29883 | 1.58272 | 5.62802 | 2.53677 | 3.09125 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.50 y A. 5.55

Cuadro N° A.5.61
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTODE LA DEMANDA DEL 3.5%, TRAMO 1. 4°
CARRIL
(km 21-42)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobúses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobúses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobúses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 97.15 | 83.30 | 80.40 | 0.21616 | 0.25209 | 0.26120 | 2.51615 | 2.39942 | 8.30069 | 6.59202 | 5.03609 | 16.21229 | 24.84437 |
| 1996 | 97.13 | 83.29 | 80.39 | 0.21620 | 0.25213 | 0.26124 | 2.51652 | 2.39977 | 8.30191 | 6.59299 | 5.03683 | 16.21466 | 24.84801 |
| 1997 | 97.12 | 83.28 | 80.37 | 0.21623 | 0.25217 | 0.26128 | 2.51690 | 2.40013 | 8.30317 | 6.59399 | 5.03760 | 16.21712 | 24.85178 |
| 1998 | 97.10 | 83.26 | 80.36 | 0.21626 | 0.25221 | 0.26132 | 2.51729 | 2.40051 | 8.30447 | 6.59502 | 5.03839 | 16.21967 | 24.85569 |
| 1999 | 97.09 | 83.25 | 80.35 | 0.21630 | 0.25225 | 0.26136 | 2.51770 | 2.40090 | 8.30582 | 6.59610 | 5.03921 | 16.22231 | 24.85973 |
| 2000 | 97.07 | 83.24 | 80.34 | 0.21633 | 0.25229 | 0.26140 | 2.51813 | 2.40131 | 8.30722 | 6.59721 | 5.04006 | 16.22504 | 24.86392 |
| 2001 | 97.06 | 83.22 | 80.32 | 0.21637 | 0.25234 | 0.26145 | 2.51857 | 2.40173 | 8.30867 | 6.59836 | 5.04093 | 16.22787 | 24.86825 |
| 2002 | 97.04 | 83.21 | 80.31 | 0.21641 | 0.25238 | 0.26150 | 2.51902 | 2.40216 | 8.31017 | 6.59955 | 5.04184 | 16.23080 | 24.87274 |
| 2003 | 97.02 | 83.19 | 80.29 | 0.21645 | 0.25243 | 0.26155 | 2.51949 | 2.40261 | 8.31172 | 6.60078 | 5.04279 | 16.23383 | 24.87739 |
| 2004 | 97.00 | 83.18 | 80.28 | 0.21649 | 0.25248 | 0.26160 | 2.51998 | 2.40307 | 8.31333 | 6.60206 | 5.04376 | 16.23697 | 24.88220 |
| 2005 | 96.98 | 83.16 | 80.26 | 0.21654 | 0.25253 | 0.26165 | 2.52048 | 2.40355 | 8.31499 | 6.60338 | 5.04477 | 16.24022 | 24.88718 |
| 2006 | 96.96 | 83.14 | 80.24 | 0.21658 | 0.25258 | 0.26170 | 2.52100 | 2.40405 | 8.31672 | 6.60475 | 5.04582 | 16.24359 | 24.89234 |
| 2007 | 96.94 | 83.12 | 80.23 | 0.21663 | 0.25264 | 0.26176 | 2.52155 | 2.40457 | 8.31850 | 6.60616 | 5.04690 | 16.24707 | 24.89768 |
| 2008 | 96.92 | 83.11 | 80.21 | 0.21668 | 0.25269 | 0.26182 | 2.52211 | 2.40510 | 8.32035 | 6.60763 | 5.04802 | 16.25068 | 24.90321 |
| 2009 | 96.90 | 83.09 | 80.19 | 0.21673 | 0.25275 | 0.26188 | 2.52269 | 2.40565 | 8.32226 | 6.60915 | 5.04918 | 16.25442 | 24.90893 |
| 2010 | 96.87 | 83.07 | 80.17 | 0.21678 | 0.25281 | 0.26194 | 2.52329 | 2.40623 | 8.32424 | 6.61072 | 5.05038 | 16.25829 | 24.91486 |

FUENTE: Elaboración propia

Cuadro N° A.5.62

COSTO DEL TIEMPO POR VEHICULO, CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 3.5%, TRAMO 2. 4°.

CARRIL
(km 42-88)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 97.24 | 83.38 | 80.47 | 0.47307 | 0.55171 | 0.57163 | 5.50655 | 5.25109 | 18.16593 | 14.42654 | 11.02141 | 35.48034 | 54.37152 |
| 1996 | 97.23 | 83.37 | 80.46 | 0.47313 | 0.55177 | 0.57169 | 5.50718 | 5.25169 | 18.16802 | 14.42819 | 11.02268 | 35.48441 | 54.37776 |
| 1997 | 97.21 | 83.36 | 80.45 | 0.47318 | 0.55183 | 0.57176 | 5.50783 | 5.25232 | 18.17018 | 14.42990 | 11.02398 | 35.48862 | 54.38421 |
| 1998 | 97.20 | 83.35 | 80.44 | 0.47324 | 0.55190 | 0.57183 | 5.50851 | 5.25296 | 18.17241 | 14.43168 | 11.02534 | 35.49299 | 54.39090 |
| 1999 | 97.19 | 83.34 | 80.43 | 0.47330 | 0.55197 | 0.57190 | 5.50921 | 5.25363 | 18.17472 | 14.43351 | 11.02674 | 35.49750 | 54.39782 |
| 2000 | 97.18 | 83.33 | 80.42 | 0.47336 | 0.55204 | 0.57198 | 5.50994 | 5.25432 | 18.17711 | 14.43541 | 11.02819 | 35.50217 | 54.40498 |
| 2001 | 97.16 | 83.32 | 80.41 | 0.47343 | 0.55212 | 0.57206 | 5.51069 | 5.25504 | 18.17959 | 14.43738 | 11.02970 | 35.50701 | 54.41239 |
| 2002 | 97.15 | 83.30 | 80.40 | 0.47349 | 0.55220 | 0.57214 | 5.51147 | 5.25578 | 18.18216 | 14.43942 | 11.03125 | 35.51202 | 54.42007 |
| 2003 | 97.14 | 83.29 | 80.39 | 0.47356 | 0.55228 | 0.57222 | 5.51227 | 5.25655 | 18.18481 | 14.44153 | 11.03286 | 35.51721 | 54.42802 |
| 2004 | 97.12 | 83.28 | 80.38 | 0.47363 | 0.55236 | 0.57231 | 5.51310 | 5.25734 | 18.18756 | 14.44371 | 11.03453 | 35.52258 | 54.43625 |
| 2005 | 97.11 | 83.27 | 80.36 | 0.47371 | 0.55245 | 0.57240 | 5.51397 | 5.25816 | 18.19041 | 14.44597 | 11.03626 | 35.52814 | 54.44477 |
| 2006 | 97.09 | 83.25 | 80.35 | 0.47379 | 0.55254 | 0.57249 | 5.51486 | 5.25902 | 18.19336 | 14.44831 | 11.03805 | 35.53390 | 54.45359 |
| 2007 | 97.07 | 83.24 | 80.34 | 0.47386 | 0.55263 | 0.57259 | 5.51579 | 5.25990 | 18.19641 | 14.45073 | 11.03990 | 35.53986 | 54.46272 |
| 2008 | 97.06 | 83.22 | 80.32 | 0.47395 | 0.55273 | 0.57269 | 5.51674 | 5.26081 | 18.19957 | 14.45324 | 11.04182 | 35.54603 | 54.47218 |
| 2009 | 97.04 | 83.21 | 80.31 | 0.47403 | 0.55283 | 0.57279 | 5.51773 | 5.26176 | 18.20284 | 14.45584 | 11.04380 | 35.55241 | 54.48197 |
| 2010 | 97.02 | 83.19 | 80.29 | 0.47412 | 0.55293 | 0.57290 | 5.51876 | 5.26274 | 18.20622 | 14.45853 | 11.04585 | 35.55903 | 54.49211 |

FUENTE: Elaboración propia

Cuadro N° A.5.63

COSTO DEL TIEMPO POR VEHICULO, CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 3.5%, TRAMO 3. 4°.

CARRIL
(km 88-103)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 97.17 | 83.32 | 80.42 | 0.15436 | 0.18002 | 0.18652 | 1.79681 | 1.71345 | 5.92761 | 4.70743 | 3.59632 | 11.57736 | 17.74161 |
| 1996 | 97.16 | 83.31 | 80.41 | 0.15439 | 0.18005 | 0.18655 | 1.79705 | 1.71369 | 5.92843 | 4.70808 | 3.59682 | 11.57896 | 17.74406 |
| 1997 | 97.15 | 83.30 | 80.40 | 0.15441 | 0.18007 | 0.18658 | 1.79731 | 1.71393 | 5.92927 | 4.70875 | 3.59733 | 11.58061 | 17.74660 |
| 1998 | 97.13 | 83.29 | 80.38 | 0.15443 | 0.18010 | 0.18660 | 1.79758 | 1.71418 | 5.93015 | 4.70945 | 3.59787 | 11.58232 | 17.74922 |
| 1999 | 97.12 | 83.27 | 80.37 | 0.15445 | 0.18013 | 0.18663 | 1.79785 | 1.71445 | 5.93106 | 4.71017 | 3.59842 | 11.58410 | 17.75194 |
| 2000 | 97.10 | 83.26 | 80.36 | 0.15448 | 0.18016 | 0.18666 | 1.79814 | 1.71472 | 5.93200 | 4.71091 | 3.59899 | 11.58593 | 17.75475 |
| 2001 | 97.08 | 83.25 | 80.35 | 0.15450 | 0.18019 | 0.18669 | 1.79843 | 1.71500 | 5.93297 | 4.71169 | 3.59958 | 11.58783 | 17.75767 |
| 2002 | 97.07 | 83.23 | 80.33 | 0.15453 | 0.18022 | 0.18672 | 1.79874 | 1.71529 | 5.93398 | 4.71249 | 3.60019 | 11.58980 | 17.76068 |
| 2003 | 97.05 | 83.22 | 80.32 | 0.15456 | 0.18025 | 0.18676 | 1.79905 | 1.71559 | 5.93502 | 4.71332 | 3.60082 | 11.59184 | 17.76380 |
| 2004 | 97.03 | 83.20 | 80.30 | 0.15459 | 0.18028 | 0.18679 | 1.79938 | 1.71590 | 5.93610 | 4.71417 | 3.60148 | 11.59395 | 17.76704 |
| 2005 | 97.02 | 83.19 | 80.29 | 0.15462 | 0.18032 | 0.18683 | 1.79972 | 1.71623 | 5.93722 | 4.71506 | 3.60216 | 11.59613 | 17.77038 |
| 2006 | 97.00 | 83.17 | 80.27 | 0.15465 | 0.18035 | 0.18686 | 1.80007 | 1.71656 | 5.93838 | 4.71598 | 3.60286 | 11.59839 | 17.77385 |
| 2007 | 96.98 | 83.15 | 80.26 | 0.15468 | 0.18039 | 0.18690 | 1.80043 | 1.71691 | 5.93958 | 4.71693 | 3.60359 | 11.60073 | 17.77744 |
| 2008 | 96.96 | 83.14 | 80.24 | 0.15471 | 0.18042 | 0.18694 | 1.80081 | 1.71727 | 5.94082 | 4.71792 | 3.60434 | 11.60316 | 17.78115 |
| 2009 | 96.94 | 83.12 | 80.22 | 0.15474 | 0.18046 | 0.18698 | 1.80120 | 1.71764 | 5.94210 | 4.71894 | 3.60512 | 11.60567 | 17.78500 |
| 2010 | 96.91 | 83.10 | 80.20 | 0.15478 | 0.18050 | 0.18702 | 1.80160 | 1.71802 | 5.94343 | 4.72000 | 3.60593 | 11.60827 | 17.78898 |

FUENTE: Elaboración propia

Cuadro N° A.5.64

COSTO DEL TIEMPO POR VEHICULO, CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 3.5%, TRAMO 4. 4°.

CARRIL
(km 103-112)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 96.88 | 83.07 | 80.17 | 0.09290 | 0.10835 | 0.11226 | 1.08139 | 1.03123 | 3.56748 | 2.83313 | 2.16442 | 6.96774 | 10.67765 |
| 1996 | 96.85 | 83.05 | 80.15 | 0.09293 | 0.10837 | 0.11229 | 1.08166 | 1.03148 | 3.56836 | 2.83383 | 2.16495 | 6.96946 | 10.68028 |
| 1997 | 96.83 | 83.03 | 80.13 | 0.09295 | 0.10840 | 0.11231 | 1.08193 | 1.03174 | 3.56927 | 2.83455 | 2.16550 | 6.97123 | 10.68300 |
| 1998 | 96.80 | 83.00 | 80.11 | 0.09297 | 0.10843 | 0.11234 | 1.08222 | 1.03201 | 3.57021 | 2.83529 | 2.16607 | 6.97307 | 10.68581 |
| 1999 | 96.77 | 82.98 | 80.09 | 0.09300 | 0.10846 | 0.11237 | 1.08252 | 1.03230 | 3.57118 | 2.83607 | 2.16667 | 6.97497 | 10.68873 |
| 2000 | 96.75 | 82.96 | 80.07 | 0.09303 | 0.10849 | 0.11241 | 1.08282 | 1.03259 | 3.57219 | 2.83687 | 2.16728 | 6.97694 | 10.69175 |
| 2001 | 96.72 | 82.93 | 80.04 | 0.09305 | 0.10852 | 0.11244 | 1.08314 | 1.03289 | 3.57324 | 2.83770 | 2.16791 | 6.97898 | 10.69488 |
| 2002 | 96.69 | 82.91 | 80.02 | 0.09308 | 0.10855 | 0.11247 | 1.08347 | 1.03320 | 3.57432 | 2.83856 | 2.16857 | 6.98110 | 10.69811 |
| 2003 | 96.66 | 82.88 | 79.99 | 0.09311 | 0.10859 | 0.11251 | 1.08381 | 1.03353 | 3.57544 | 2.83945 | 2.16925 | 6.98328 | 10.70147 |
| 2004 | 96.63 | 82.86 | 79.97 | 0.09314 | 0.10862 | 0.11254 | 1.08416 | 1.03386 | 3.57660 | 2.84037 | 2.16995 | 6.98555 | 10.70494 |
| 2005 | 96.60 | 82.83 | 79.94 | 0.09317 | 0.10866 | 0.11258 | 1.08452 | 1.03421 | 3.57780 | 2.84132 | 2.17068 | 6.98790 | 10.70854 |
| 2006 | 96.56 | 82.80 | 79.91 | 0.09320 | 0.10870 | 0.11262 | 1.08490 | 1.03457 | 3.57905 | 2.84231 | 2.17144 | 6.99033 | 10.71227 |
| 2007 | 96.53 | 82.77 | 79.88 | 0.09324 | 0.10874 | 0.11266 | 1.08529 | 1.03494 | 3.58034 | 2.84334 | 2.17222 | 6.99285 | 10.71613 |
| 2008 | 96.49 | 82.74 | 79.85 | 0.09327 | 0.10878 | 0.11270 | 1.08569 | 1.03533 | 3.58167 | 2.84440 | 2.17303 | 6.99546 | 10.72012 |
| 2009 | 96.45 | 82.71 | 79.82 | 0.09331 | 0.10882 | 0.11275 | 1.08611 | 1.03573 | 3.58306 | 2.84550 | 2.17387 | 6.99816 | 10.72426 |
| 2010 | 96.42 | 82.67 | 79.79 | 0.09335 | 0.10886 | 0.11279 | 1.08655 | 1.03614 | 3.58449 | 2.84663 | 2.17474 | 7.00096 | 10.72855 |

FUENTE: Elaboración propia

Cuadro N° A.5.65
COSTO DEL TIEMPO POR VEHICULO, CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 3.5%, TRAMO 5. 4°
CARRIL
(km 112-115)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobús | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 97.17 | 83.32 | 80.42 | 0.03087 | 0.03600 | 0.03730 | 0.35936 | 0.34269 | 1.18552 | 0.94149 | 0.71926 | 2.31547 | 3.54832 |
| 1996 | 97.16 | 83.31 | 80.41 | 0.03088 | 0.03601 | 0.03731 | 0.35941 | 0.34274 | 1.18569 | 0.94162 | 0.71936 | 2.31579 | 3.54881 |
| 1997 | 97.15 | 83.30 | 80.40 | 0.03088 | 0.03601 | 0.03732 | 0.35946 | 0.34279 | 1.18585 | 0.94175 | 0.71947 | 2.31612 | 3.54932 |
| 1998 | 97.13 | 83.29 | 80.38 | 0.03089 | 0.03602 | 0.03732 | 0.35952 | 0.34284 | 1.18603 | 0.94189 | 0.71957 | 2.31646 | 3.54984 |
| 1999 | 97.12 | 83.27 | 80.37 | 0.03089 | 0.03603 | 0.03733 | 0.35957 | 0.34289 | 1.18621 | 0.94203 | 0.71968 | 2.31682 | 3.55039 |
| 2000 | 97.10 | 83.26 | 80.36 | 0.03090 | 0.03603 | 0.03733 | 0.35963 | 0.34294 | 1.18640 | 0.94218 | 0.71980 | 2.31719 | 3.55095 |
| 2001 | 97.08 | 83.25 | 80.35 | 0.03090 | 0.03604 | 0.03734 | 0.35969 | 0.34300 | 1.18659 | 0.94234 | 0.71992 | 2.31757 | 3.55153 |
| 2002 | 97.07 | 83.23 | 80.33 | 0.03091 | 0.03604 | 0.03734 | 0.35975 | 0.34306 | 1.18680 | 0.94250 | 0.72004 | 2.31796 | 3.55214 |
| 2003 | 97.05 | 83.22 | 80.32 | 0.03091 | 0.03605 | 0.03735 | 0.35981 | 0.34312 | 1.18700 | 0.94266 | 0.72016 | 2.31837 | 3.55276 |
| 2004 | 97.03 | 83.20 | 80.30 | 0.03092 | 0.03606 | 0.03736 | 0.35988 | 0.34318 | 1.18722 | 0.94283 | 0.72030 | 2.31879 | 3.55341 |
| 2005 | 97.02 | 83.19 | 80.29 | 0.03092 | 0.03606 | 0.03737 | 0.35994 | 0.34325 | 1.18744 | 0.94301 | 0.72043 | 2.31923 | 3.55408 |
| 2006 | 97.00 | 83.17 | 80.27 | 0.03093 | 0.03607 | 0.03737 | 0.36001 | 0.34331 | 1.18768 | 0.94320 | 0.72057 | 2.31968 | 3.55477 |
| 2007 | 96.98 | 83.15 | 80.26 | 0.03094 | 0.03608 | 0.03738 | 0.36009 | 0.34338 | 1.18792 | 0.94339 | 0.72072 | 2.32015 | 3.55549 |
| 2008 | 96.96 | 83.14 | 80.24 | 0.03094 | 0.03608 | 0.03739 | 0.36016 | 0.34345 | 1.18816 | 0.94358 | 0.72087 | 2.32063 | 3.55623 |
| 2009 | 96.94 | 83.12 | 80.22 | 0.03095 | 0.03609 | 0.03740 | 0.36024 | 0.34353 | 1.18842 | 0.94379 | 0.72102 | 2.32113 | 3.55700 |
| 2010 | 96.91 | 83.10 | 80.20 | 0.03096 | 0.03610 | 0.03740 | 0.36032 | 0.34360 | 1.18869 | 0.94400 | 0.72119 | 2.32165 | 3.55780 |

FUENTE: Elaboración propia

Cuadro N° A.5.66

PROYECTO AMPLIACIÓN A UN 4°. CARRIL VS 3^{er}. CARRIL.

AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 3.5%. TRAMO 1

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 2.52041 | 2.51615 | 0.00426 | 2.40348 | 2.39942 | 0.00406 | 6.60348 | 6.59202 | 0.01146 | 5.04484 | 5.03609 | 0.00875 | 8.31475 | 8.30069 | 0.01406 | 16.23974 | 16.21229 | 0.02745 |
| 1996 | 2.52093 | 2.51652 | 0.00441 | 2.40398 | 2.39977 | 0.00421 | 6.60484 | 6.59299 | 0.01185 | 5.04588 | 5.03683 | 0.00905 | 8.31646 | 8.30191 | 0.01455 | 16.24309 | 16.21466 | 0.02842 |
| 1997 | 2.52147 | 2.51690 | 0.00457 | 2.40449 | 2.40013 | 0.00436 | 6.60625 | 6.59399 | 0.01226 | 5.04696 | 5.03760 | 0.00937 | 8.31824 | 8.30317 | 0.01507 | 16.24655 | 16.21712 | 0.02943 |
| 1998 | 2.52202 | 2.51729 | 0.00473 | 2.40502 | 2.40051 | 0.00451 | 6.60771 | 6.59502 | 0.01268 | 5.04808 | 5.03839 | 0.00969 | 8.32007 | 8.30447 | 0.01560 | 16.25014 | 16.21967 | 0.03047 |
| 1999 | 2.52260 | 2.51770 | 0.00490 | 2.40557 | 2.40090 | 0.00467 | 6.60922 | 6.59610 | 0.01312 | 5.04923 | 5.03921 | 0.01003 | 8.32198 | 8.30582 | 0.01615 | 16.25386 | 16.22231 | 0.03155 |
| 2000 | 2.52320 | 2.51813 | 0.00507 | 2.40614 | 2.40131 | 0.00483 | 6.61078 | 6.59721 | 0.01358 | 5.05043 | 5.04006 | 0.01037 | 8.32395 | 8.30722 | 0.01673 | 16.25771 | 16.22504 | 0.03267 |
| 2001 | 2.52382 | 2.51857 | 0.00525 | 2.40673 | 2.40173 | 0.00501 | 6.61241 | 6.59836 | 0.01405 | 5.05167 | 5.04093 | 0.01073 | 8.32599 | 8.30867 | 0.01732 | 16.26170 | 16.22787 | 0.03383 |
| 2002 | 2.52446 | 2.51902 | 0.00544 | 2.40734 | 2.40216 | 0.00518 | 6.61408 | 6.59955 | 0.01454 | 5.05295 | 5.04184 | 0.01110 | 8.32810 | 8.31017 | 0.01793 | 16.26582 | 16.23080 | 0.03502 |
| 2003 | 2.52512 | 2.51949 | 0.00563 | 2.40797 | 2.40261 | 0.00537 | 6.61582 | 6.60078 | 0.01504 | 5.05428 | 5.04279 | 0.01149 | 8.33029 | 8.31172 | 0.01857 | 16.27010 | 16.23383 | 0.03627 |
| 2004 | 2.52581 | 2.51998 | 0.00583 | 2.40863 | 2.40307 | 0.00556 | 6.61762 | 6.60206 | 0.01556 | 5.05565 | 5.04376 | 0.01189 | 8.33256 | 8.31333 | 0.01923 | 16.27453 | 16.23697 | 0.03755 |
| 2005 | 2.52652 | 2.52048 | 0.00604 | 2.40931 | 2.40355 | 0.00576 | 6.61948 | 6.60338 | 0.01611 | 5.05707 | 5.04477 | 0.01230 | 8.33490 | 8.31499 | 0.01991 | 16.27911 | 16.24022 | 0.03889 |
| 2006 | 2.52725 | 2.52100 | 0.00625 | 2.41001 | 2.40405 | 0.00596 | 6.62142 | 6.60475 | 0.01667 | 5.05855 | 5.04582 | 0.01273 | 8.33733 | 8.31672 | 0.02062 | 16.28386 | 16.24359 | 0.04027 |
| 2007 | 2.52802 | 2.52155 | 0.00647 | 2.41074 | 2.40457 | 0.00617 | 6.62341 | 6.60616 | 0.01725 | 5.06008 | 5.04690 | 0.01318 | 8.33985 | 8.31850 | 0.02135 | 16.28877 | 16.24707 | 0.04170 |
| 2008 | 2.52881 | 2.52211 | 0.00670 | 2.41149 | 2.40510 | 0.00639 | 6.62548 | 6.60763 | 0.01785 | 5.06166 | 5.04802 | 0.01364 | 8.34246 | 8.32035 | 0.02211 | 16.29386 | 16.25068 | 0.04318 |
| 2009 | 2.52963 | 2.52269 | 0.00694 | 2.41227 | 2.40565 | 0.00662 | 6.62763 | 6.60915 | 0.01848 | 5.06330 | 5.04918 | 0.01412 | 8.34516 | 8.32226 | 0.02290 | 16.29913 | 16.25442 | 0.04472 |
| 2010 | 2.53047 | 2.52329 | 0.00719 | 2.41308 | 2.40623 | 0.00685 | 6.62985 | 6.61072 | 0.01912 | 5.06499 | 5.05038 | 0.01461 | 8.34795 | 8.32424 | 0.02371 | 16.30460 | 16.25829 | 0.04631 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.61 y A. 5.6

Cuadro N° A.5.67

PROYECTO AMPLIACIÓN A UN 4° CARRIL VS 3^{er}. CARRIL.

AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 3.5%. TRAMO 2

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 5.51384 | 5.50655 | 0.00729 | 5.25804 | 5.25109 | 0.00695 | 14.44688 | 14.42654 | 0.02035 | 11.03696 | 11.02141 | 0.01554 | 18.18998 | 18.16593 | 0.02405 | 35.52731 | 35.48034 | 0.04697 |
| 1996 | 5.51473 | 5.50718 | 0.00755 | 5.25889 | 5.25169 | 0.00720 | 14.44921 | 14.42819 | 0.02102 | 11.03873 | 11.02268 | 0.01606 | 18.19292 | 18.16802 | 0.02490 | 35.53304 | 35.48441 | 0.04863 |
| 1997 | 5.51565 | 5.50783 | 0.00781 | 5.25977 | 5.25232 | 0.00745 | 14.45162 | 14.42990 | 0.02172 | 11.04058 | 11.02398 | 0.01659 | 18.19595 | 18.17018 | 0.02578 | 35.53897 | 35.48862 | 0.05035 |
| 1998 | 5.51660 | 5.50851 | 0.00809 | 5.26068 | 5.25296 | 0.00771 | 14.45412 | 14.43168 | 0.02244 | 11.04248 | 11.02534 | 0.01714 | 18.19910 | 18.17241 | 0.02669 | 35.54511 | 35.49299 | 0.05212 |
| 1999 | 5.51759 | 5.50921 | 0.00838 | 5.26162 | 5.25363 | 0.00799 | 14.45670 | 14.43351 | 0.02319 | 11.04446 | 11.02674 | 0.01772 | 18.20235 | 18.17472 | 0.02763 | 35.55147 | 35.49750 | 0.05396 |
| 2000 | 5.51861 | 5.50994 | 0.00867 | 5.26259 | 5.25432 | 0.00827 | 14.45938 | 14.43541 | 0.02397 | 11.04650 | 11.02819 | 0.01831 | 18.20572 | 18.17711 | 0.02861 | 35.55805 | 35.50217 | 0.05587 |
| 2001 | 5.51967 | 5.51069 | 0.00898 | 5.26360 | 5.25504 | 0.00856 | 14.46215 | 14.43738 | 0.02477 | 11.04862 | 11.02970 | 0.01892 | 18.20921 | 18.17959 | 0.02962 | 35.56486 | 35.50701 | 0.05785 |
| 2002 | 5.52076 | 5.51147 | 0.00930 | 5.26464 | 5.25578 | 0.00886 | 14.46502 | 14.43942 | 0.02560 | 11.05081 | 11.03125 | 0.01956 | 18.21282 | 18.18216 | 0.03066 | 35.57191 | 35.51202 | 0.05989 |
| 2003 | 5.52189 | 5.51227 | 0.00962 | 5.26572 | 5.25655 | 0.00918 | 14.46799 | 14.44153 | 0.02646 | 11.05308 | 11.03286 | 0.02022 | 18.21656 | 18.18481 | 0.03175 | 35.57922 | 35.51721 | 0.06201 |
| 2004 | 5.52307 | 5.51310 | 0.00996 | 5.26684 | 5.25734 | 0.00950 | 14.47106 | 14.44371 | 0.02735 | 11.05543 | 11.03453 | 0.02090 | 18.22043 | 18.18756 | 0.03287 | 35.58678 | 35.52258 | 0.06420 |
| 2005 | 5.52428 | 5.51397 | 0.01032 | 5.26800 | 5.25816 | 0.00984 | 14.47425 | 14.44597 | 0.02828 | 11.05786 | 11.03626 | 0.02160 | 18.22444 | 18.19041 | 0.03403 | 35.59462 | 35.52814 | 0.06647 |
| 2006 | 5.52554 | 5.51486 | 0.01068 | 5.26920 | 5.25902 | 0.01019 | 14.47755 | 14.44831 | 0.02924 | 11.06038 | 11.03805 | 0.02234 | 18.22860 | 18.19336 | 0.03524 | 35.60272 | 35.53390 | 0.06883 |
| 2007 | 5.52685 | 5.51579 | 0.01106 | 5.27045 | 5.25990 | 0.01055 | 14.48096 | 14.45073 | 0.03023 | 11.06299 | 11.03990 | 0.02309 | 18.23289 | 18.19641 | 0.03649 | 35.61112 | 35.53986 | 0.07127 |
| 2008 | 5.52820 | 5.51674 | 0.01145 | 5.27173 | 5.26081 | 0.01092 | 14.48450 | 14.45324 | 0.03125 | 11.06569 | 11.04182 | 0.02388 | 18.23735 | 18.19957 | 0.03778 | 35.61982 | 35.54603 | 0.07379 |
| 2009 | 5.52959 | 5.51773 | 0.01186 | 5.27307 | 5.26176 | 0.01131 | 14.48816 | 14.45584 | 0.03232 | 11.06849 | 11.04380 | 0.02469 | 18.24196 | 18.20284 | 0.03912 | 35.62882 | 35.55241 | 0.07641 |
| 2010 | 5.53104 | 5.51876 | 0.01228 | 5.27445 | 5.26274 | 0.01171 | 14.49195 | 14.45853 | 0.03342 | 11.07139 | 11.04585 | 0.02553 | 18.24673 | 18.20622 | 0.04051 | 35.63815 | 35.55903 | 0.07912 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.62 y A. 5.7

Cuadro N° A.5.68

PROYECTO AMPLIACIÓN A UN 4° CARRIL VS 3^{er}. CARRIL.

AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 3.5%. TRAMO 3

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.79967 | 1.79681 | 0.00286 | 1.71618 | 1.71345 | 0.00273 | 4.71482 | 4.70743 | 0.00740 | 3.60197 | 3.59632 | 0.00565 | 5.93705 | 5.92761 | 0.00945 | 11.59581 | 11.57736 | 0.01845 |
| 1996 | 1.80002 | 1.79705 | 0.00296 | 1.71651 | 1.71369 | 0.00283 | 4.71574 | 4.70808 | 0.00766 | 3.60267 | 3.59682 | 0.00585 | 5.93820 | 5.92843 | 0.00978 | 11.59806 | 11.57896 | 0.01910 |
| 1997 | 1.80038 | 1.79731 | 0.00307 | 1.71686 | 1.71393 | 0.00293 | 4.71669 | 4.70875 | 0.00794 | 3.60340 | 3.59733 | 0.00606 | 5.93940 | 5.92927 | 0.01013 | 11.60039 | 11.58061 | 0.01978 |
| 1998 | 1.80075 | 1.79758 | 0.00318 | 1.71721 | 1.71418 | 0.00303 | 4.71767 | 4.70945 | 0.00822 | 3.60415 | 3.59787 | 0.00628 | 5.94063 | 5.93015 | 0.01048 | 11.60280 | 11.58232 | 0.02047 |
| 1999 | 1.80114 | 1.79785 | 0.00329 | 1.71758 | 1.71445 | 0.00314 | 4.71868 | 4.71017 | 0.00851 | 3.60492 | 3.59842 | 0.00650 | 5.94191 | 5.93106 | 0.01085 | 11.60529 | 11.58410 | 0.02120 |
| 2000 | 1.80154 | 1.79814 | 0.00341 | 1.71797 | 1.71472 | 0.00325 | 4.71973 | 4.71091 | 0.00882 | 3.60573 | 3.59899 | 0.00674 | 5.94324 | 5.93200 | 0.01124 | 11.60788 | 11.58593 | 0.02195 |
| 2001 | 1.80196 | 1.79843 | 0.00353 | 1.71836 | 1.71500 | 0.00336 | 4.72082 | 4.71169 | 0.00914 | 3.60656 | 3.59958 | 0.00698 | 5.94461 | 5.93297 | 0.01164 | 11.61056 | 11.58783 | 0.02273 |
| 2002 | 1.80239 | 1.79874 | 0.00365 | 1.71877 | 1.71529 | 0.00348 | 4.72195 | 4.71249 | 0.00946 | 3.60742 | 3.60019 | 0.00723 | 5.94603 | 5.93398 | 0.01205 | 11.61333 | 11.58980 | 0.02353 |
| 2003 | 1.80283 | 1.79905 | 0.00378 | 1.71920 | 1.71559 | 0.00361 | 4.72312 | 4.71332 | 0.00980 | 3.60831 | 3.60082 | 0.00749 | 5.94750 | 5.93502 | 0.01248 | 11.61620 | 11.59184 | 0.02437 |
| 2004 | 1.80330 | 1.79938 | 0.00392 | 1.71964 | 1.71590 | 0.00373 | 4.72433 | 4.71417 | 0.01015 | 3.60923 | 3.60148 | 0.00776 | 5.94902 | 5.93610 | 0.01292 | 11.61918 | 11.59395 | 0.02523 |
| 2005 | 1.80377 | 1.79972 | 0.00405 | 1.72009 | 1.71623 | 0.00387 | 4.72558 | 4.71506 | 0.01052 | 3.61019 | 3.60216 | 0.00803 | 5.95059 | 5.93722 | 0.01338 | 11.62226 | 11.59613 | 0.02612 |
| 2006 | 1.80427 | 1.80007 | 0.00420 | 1.72057 | 1.71656 | 0.00400 | 4.72687 | 4.71598 | 0.01089 | 3.61118 | 3.60286 | 0.00832 | 5.95223 | 5.93838 | 0.01385 | 11.62544 | 11.59839 | 0.02705 |
| 2007 | 1.80478 | 1.80043 | 0.00435 | 1.72105 | 1.71691 | 0.00415 | 4.72822 | 4.71693 | 0.01128 | 3.61221 | 3.60359 | 0.00862 | 5.95392 | 5.93958 | 0.01434 | 11.62875 | 11.60073 | 0.02801 |
| 2008 | 1.80531 | 1.80081 | 0.00450 | 1.72156 | 1.71727 | 0.00429 | 4.72961 | 4.71792 | 0.01169 | 3.61327 | 3.60434 | 0.00893 | 5.95567 | 5.94082 | 0.01485 | 11.63216 | 11.60316 | 0.02901 |
| 2009 | 1.80586 | 1.80120 | 0.00466 | 1.72208 | 1.71764 | 0.00445 | 4.73105 | 4.71894 | 0.01211 | 3.61437 | 3.60512 | 0.00925 | 5.95748 | 5.94210 | 0.01538 | 11.63571 | 11.60567 | 0.03004 |
| 2010 | 1.80643 | 1.80160 | 0.00483 | 1.72263 | 1.71802 | 0.00460 | 4.73254 | 4.72000 | 0.01254 | 3.61551 | 3.60593 | 0.00958 | 5.95936 | 5.94343 | 0.01593 | 11.63937 | 11.60827 | 0.03111 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.63 y A. 5. 8

Cuadro N° A.5.69

PROYECTO AMPLIACIÓN A UN 4° CARRIL VS 3^{er}. CARRIL.

AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 3.5%. TRAMO 4

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.08340 | 1.08139 | 0.00200 | 1.03314 | 1.03123 | 0.00191 | 2.83826 | 2.83313 | 0.00513 | 2.16834 | 2.16442 | 0.00392 | 3.57409 | 3.56748 | 0.00661 | 6.98065 | 6.96774 | 0.01291 |
| 1996 | 1.08373 | 1.08166 | 0.00207 | 1.03346 | 1.03148 | 0.00198 | 2.83914 | 2.83383 | 0.00531 | 2.16901 | 2.16495 | 0.00406 | 3.57520 | 3.56836 | 0.00684 | 6.98282 | 6.96946 | 0.01336 |
| 1997 | 1.08408 | 1.08193 | 0.00215 | 1.03379 | 1.03174 | 0.00205 | 2.84005 | 2.83455 | 0.00551 | 2.16971 | 2.16550 | 0.00421 | 3.57636 | 3.56927 | 0.00709 | 6.98507 | 6.97123 | 0.01384 |
| 1998 | 1.08444 | 1.08222 | 0.00222 | 1.03414 | 1.03201 | 0.00212 | 2.84100 | 2.83529 | 0.00571 | 2.17043 | 2.16607 | 0.00436 | 3.57755 | 3.57021 | 0.00734 | 6.98740 | 6.97307 | 0.01433 |
| 1999 | 1.08482 | 1.08252 | 0.00230 | 1.03449 | 1.03230 | 0.00220 | 2.84198 | 2.83607 | 0.00592 | 2.17118 | 2.16667 | 0.00452 | 3.57873 | 3.57118 | 0.00760 | 6.98981 | 6.97497 | 0.01484 |
| 2000 | 1.08521 | 1.08282 | 0.00239 | 1.03486 | 1.03259 | 0.00228 | 2.84300 | 2.83687 | 0.00613 | 2.17196 | 2.16728 | 0.00468 | 3.58006 | 3.57219 | 0.00787 | 6.99231 | 6.97694 | 0.01537 |
| 2001 | 1.08561 | 1.08314 | 0.00247 | 1.03525 | 1.03289 | 0.00236 | 2.84405 | 2.83770 | 0.00635 | 2.17277 | 2.16791 | 0.00485 | 3.58139 | 3.57324 | 0.00815 | 6.99490 | 6.97898 | 0.01592 |
| 2002 | 1.08603 | 1.08347 | 0.00256 | 1.03564 | 1.03320 | 0.00244 | 2.84514 | 2.83856 | 0.00658 | 2.17360 | 2.16857 | 0.00503 | 3.58276 | 3.57432 | 0.00844 | 6.99759 | 6.98110 | 0.01649 |
| 2003 | 1.08646 | 1.08381 | 0.00265 | 1.03605 | 1.03353 | 0.00253 | 2.84627 | 2.83945 | 0.00682 | 2.17446 | 2.16925 | 0.00521 | 3.58419 | 3.57544 | 0.00874 | 7.00036 | 6.98328 | 0.01708 |
| 2004 | 1.08690 | 1.08416 | 0.00275 | 1.03648 | 1.03386 | 0.00262 | 2.84744 | 2.84037 | 0.00707 | 2.17535 | 2.16995 | 0.00540 | 3.58566 | 3.57660 | 0.00906 | 7.00324 | 6.98555 | 0.01769 |
| 2005 | 1.08737 | 1.08452 | 0.00284 | 1.03692 | 1.03421 | 0.00271 | 2.84865 | 2.84132 | 0.00733 | 2.17628 | 2.17068 | 0.00560 | 3.58719 | 3.57780 | 0.00938 | 7.00622 | 6.98790 | 0.01832 |
| 2006 | 1.08784 | 1.08490 | 0.00295 | 1.03738 | 1.03457 | 0.00281 | 2.84991 | 2.84231 | 0.00760 | 2.17724 | 2.17144 | 0.00580 | 3.58877 | 3.57905 | 0.00972 | 7.00931 | 6.99033 | 0.01898 |
| 2007 | 1.08834 | 1.08529 | 0.00305 | 1.03785 | 1.03494 | 0.00291 | 2.85121 | 2.84334 | 0.00787 | 2.17823 | 2.17222 | 0.00601 | 3.59040 | 3.58034 | 0.01007 | 7.01251 | 6.99285 | 0.01966 |
| 2008 | 1.08886 | 1.08569 | 0.00316 | 1.03834 | 1.03533 | 0.00301 | 2.85256 | 2.84440 | 0.00816 | 2.17926 | 2.17303 | 0.00623 | 3.59210 | 3.58167 | 0.01043 | 7.01582 | 6.99546 | 0.02037 |
| 2009 | 1.08939 | 1.08611 | 0.00327 | 1.03885 | 1.03573 | 0.00312 | 2.85395 | 2.84550 | 0.00846 | 2.18033 | 2.17387 | 0.00646 | 3.59386 | 3.58306 | 0.01080 | 7.01926 | 6.99816 | 0.02110 |
| 2010 | 1.08994 | 1.08655 | 0.00339 | 1.03938 | 1.03614 | 0.00323 | 2.85540 | 2.84663 | 0.00877 | 2.18143 | 2.17474 | 0.00670 | 3.59568 | 3.58449 | 0.01119 | 7.02281 | 7.00096 | 0.02185 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.64 y A. 5. 9

Cuadro N° A.5.70

PROYECTO AMPLIACIÓN A UN 4° CARRIL VS 3^{er}. CARRIL.

AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 3.5%. TRAMO 5

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 0.35987 | 0.35936 | 0.00051 | 0.34318 | 0.34269 | 0.00049 | 0.94316 | 0.94149 | 0.00167 | 0.72054 | 0.71926 | 0.00128 | 1.18721 | 1.18552 | 0.00169 | 2.31877 | 2.31547 | 0.00330 |
| 1996 | 0.35994 | 0.35941 | 0.00053 | 0.34324 | 0.34274 | 0.00051 | 0.94334 | 0.94162 | 0.00172 | 0.72068 | 0.71936 | 0.00131 | 1.18743 | 1.18569 | 0.00175 | 2.31920 | 2.31579 | 0.00341 |
| 1997 | 0.36001 | 0.35946 | 0.00055 | 0.34331 | 0.34279 | 0.00052 | 0.94352 | 0.94175 | 0.00177 | 0.72082 | 0.71947 | 0.00135 | 1.18766 | 1.18585 | 0.00181 | 2.31966 | 2.31612 | 0.00353 |
| 1998 | 0.36008 | 0.35952 | 0.00057 | 0.34338 | 0.34284 | 0.00054 | 0.94371 | 0.94189 | 0.00182 | 0.72096 | 0.71957 | 0.00139 | 1.18790 | 1.18603 | 0.00187 | 2.32012 | 2.31646 | 0.00366 |
| 1999 | 0.36016 | 0.35957 | 0.00059 | 0.34345 | 0.34289 | 0.00056 | 0.94391 | 0.94203 | 0.00187 | 0.72111 | 0.71968 | 0.00143 | 1.18815 | 1.18621 | 0.00194 | 2.32061 | 2.31682 | 0.00379 |
| 2000 | 0.36024 | 0.35963 | 0.00061 | 0.34352 | 0.34294 | 0.00058 | 0.94411 | 0.94218 | 0.00193 | 0.72127 | 0.71980 | 0.00147 | 1.18841 | 1.18640 | 0.00201 | 2.32111 | 2.31719 | 0.00392 |
| 2001 | 0.36032 | 0.35969 | 0.00063 | 0.34360 | 0.34300 | 0.00060 | 0.94432 | 0.94234 | 0.00198 | 0.72143 | 0.71992 | 0.00152 | 1.18867 | 1.18659 | 0.00208 | 2.32163 | 2.31757 | 0.00406 |
| 2002 | 0.36040 | 0.35975 | 0.00065 | 0.34368 | 0.34306 | 0.00062 | 0.94454 | 0.94250 | 0.00204 | 0.72160 | 0.72004 | 0.00156 | 1.18895 | 1.18680 | 0.00215 | 2.32216 | 2.31796 | 0.00420 |
| 2003 | 0.36049 | 0.35981 | 0.00068 | 0.34376 | 0.34312 | 0.00064 | 0.94477 | 0.94266 | 0.00210 | 0.72177 | 0.72016 | 0.00161 | 1.18923 | 1.18700 | 0.00223 | 2.32272 | 2.31837 | 0.00435 |
| 2004 | 0.36058 | 0.35988 | 0.00070 | 0.34385 | 0.34318 | 0.00067 | 0.94500 | 0.94283 | 0.00217 | 0.72195 | 0.72030 | 0.00166 | 1.18953 | 1.18722 | 0.00231 | 2.32330 | 2.31879 | 0.00451 |
| 2005 | 0.36067 | 0.35994 | 0.00072 | 0.34394 | 0.34325 | 0.00069 | 0.94524 | 0.94301 | 0.00223 | 0.72214 | 0.72043 | 0.00171 | 1.18983 | 1.18744 | 0.00239 | 2.32389 | 2.31923 | 0.00467 |
| 2006 | 0.36076 | 0.36001 | 0.00075 | 0.34403 | 0.34331 | 0.00072 | 0.94550 | 0.94320 | 0.00230 | 0.72233 | 0.72057 | 0.00176 | 1.19015 | 1.18768 | 0.00247 | 2.32451 | 2.31968 | 0.00483 |
| 2007 | 0.36086 | 0.36009 | 0.00078 | 0.34412 | 0.34338 | 0.00074 | 0.94576 | 0.94339 | 0.00237 | 0.72253 | 0.72072 | 0.00181 | 1.19048 | 1.18792 | 0.00256 | 2.32515 | 2.32015 | 0.00500 |
| 2008 | 0.36097 | 0.36016 | 0.00080 | 0.34422 | 0.34345 | 0.00077 | 0.94603 | 0.94358 | 0.00244 | 0.72273 | 0.72087 | 0.00187 | 1.19082 | 1.18816 | 0.00265 | 2.32581 | 2.32063 | 0.00518 |
| 2009 | 0.36107 | 0.36024 | 0.00083 | 0.34432 | 0.34353 | 0.00079 | 0.94630 | 0.94379 | 0.00252 | 0.72295 | 0.72102 | 0.00192 | 1.19117 | 1.18842 | 0.00275 | 2.32650 | 2.32113 | 0.00537 |
| 2010 | 0.36118 | 0.36032 | 0.00086 | 0.34443 | 0.34360 | 0.00082 | 0.94659 | 0.94400 | 0.00259 | 0.72317 | 0.72119 | 0.00198 | 1.19153 | 1.18869 | 0.00285 | 2.32721 | 2.32165 | 0.00556 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.65 y A. 5.10

Cuadro N° A.5.71
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 7%,TRAMO1.
4° CARRIL
(km 21-42)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobus | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 97.15 | 83.30 | 80.40 | 0.21616 | 0.25209 | 0.26120 | 2.51615 | 2.39942 | 8.30069 | 6.59202 | 5.03609 | 16.21229 | 24.84437 |
| 1996 | 97.12 | 83.28 | 80.38 | 0.21623 | 0.25217 | 0.26127 | 2.51688 | 2.40012 | 8.30313 | 6.59395 | 5.03757 | 16.21704 | 24.85165 |
| 1997 | 97.09 | 83.25 | 80.35 | 0.21630 | 0.25225 | 0.26136 | 2.51768 | 2.40088 | 8.30573 | 6.59602 | 5.03915 | 16.22213 | 24.85946 |
| 1998 | 97.06 | 83.22 | 80.32 | 0.21637 | 0.25233 | 0.26144 | 2.51852 | 2.40168 | 8.30852 | 6.59824 | 5.04084 | 16.22759 | 24.86781 |
| 1999 | 97.02 | 83.19 | 80.29 | 0.21645 | 0.25242 | 0.26154 | 2.51943 | 2.40255 | 8.31151 | 6.60061 | 5.04266 | 16.23342 | 24.87676 |
| 2000 | 96.98 | 83.16 | 80.26 | 0.21653 | 0.25252 | 0.26164 | 2.52040 | 2.40347 | 8.31471 | 6.60316 | 5.04460 | 16.23967 | 24.88634 |
| 2001 | 96.94 | 83.13 | 80.23 | 0.21662 | 0.25262 | 0.26175 | 2.52144 | 2.40446 | 8.31814 | 6.60588 | 5.04668 | 16.24637 | 24.89660 |
| 2002 | 96.90 | 83.09 | 80.19 | 0.21671 | 0.25274 | 0.26186 | 2.52255 | 2.40552 | 8.32181 | 6.60879 | 5.04891 | 16.25354 | 24.90758 |
| 2003 | 96.86 | 83.05 | 80.16 | 0.21682 | 0.25286 | 0.26199 | 2.52374 | 2.40666 | 8.32574 | 6.61191 | 5.05129 | 16.26121 | 24.91935 |
| 2004 | 96.81 | 83.01 | 80.12 | 0.21693 | 0.25298 | 0.26212 | 2.52502 | 2.40788 | 8.32995 | 6.61526 | 5.05384 | 16.26944 | 24.93195 |
| 2005 | 96.75 | 82.96 | 80.07 | 0.21704 | 0.25312 | 0.26226 | 2.52638 | 2.40918 | 8.33446 | 6.61884 | 5.05658 | 16.27824 | 24.94544 |
| 2006 | 96.70 | 82.92 | 80.03 | 0.21717 | 0.25327 | 0.26241 | 2.52785 | 2.41058 | 8.33929 | 6.62267 | 5.05951 | 16.28768 | 24.95990 |
| 2007 | 96.64 | 82.87 | 79.98 | 0.21730 | 0.25342 | 0.26258 | 2.52942 | 2.41207 | 8.34447 | 6.62678 | 5.06265 | 16.29779 | 24.97539 |
| 2008 | 96.57 | 82.81 | 79.92 | 0.21745 | 0.25359 | 0.26275 | 2.53110 | 2.41367 | 8.35001 | 6.63119 | 5.06601 | 16.30861 | 24.99198 |
| 2009 | 96.51 | 82.75 | 79.87 | 0.21760 | 0.25377 | 0.26294 | 2.53290 | 2.41539 | 8.35595 | 6.63590 | 5.06962 | 16.32022 | 25.00976 |
| 2010 | 96.43 | 82.69 | 79.81 | 0.21777 | 0.25397 | 0.26314 | 2.53483 | 2.41723 | 8.36232 | 6.64096 | 5.07348 | 16.33265 | 25.02882 |

FUENTE: Elaboración propia

Cuadro N° A.5.72

**COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 7% ,TRAMO
2. 4° CARRIL
(km 42-88)**

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobus | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 97.24 | 83.38 | 80.47 | 0.47307 | 0.55171 | 0.57163 | 5.50655 | 5.25109 | 18.16593 | 14.42654 | 11.02141 | 35.48034 | 54.37152 |
| 1996 | 97.21 | 83.36 | 80.45 | 0.47318 | 0.55183 | 0.57176 | 5.50781 | 5.25230 | 18.17010 | 14.42984 | 11.02394 | 35.48848 | 54.38399 |
| 1997 | 97.19 | 83.34 | 80.43 | 0.47330 | 0.55197 | 0.57190 | 5.50916 | 5.25358 | 18.17456 | 14.43339 | 11.02665 | 35.49720 | 54.39735 |
| 1998 | 97.17 | 83.32 | 80.41 | 0.47342 | 0.55211 | 0.57205 | 5.51061 | 5.25497 | 18.17934 | 14.43718 | 11.02954 | 35.50652 | 54.41164 |
| 1999 | 97.14 | 83.29 | 80.39 | 0.47355 | 0.55227 | 0.57221 | 5.51216 | 5.25644 | 18.18445 | 14.44124 | 11.03265 | 35.51651 | 54.42695 |
| 2000 | 97.11 | 83.27 | 80.37 | 0.47370 | 0.55243 | 0.57238 | 5.51382 | 5.25803 | 18.18993 | 14.44559 | 11.03597 | 35.52720 | 54.44333 |
| 2001 | 97.08 | 83.24 | 80.34 | 0.47385 | 0.55261 | 0.57257 | 5.51560 | 5.25972 | 18.19579 | 14.45024 | 11.03952 | 35.53865 | 54.46088 |
| 2002 | 97.04 | 83.21 | 80.31 | 0.47401 | 0.55280 | 0.57276 | 5.51750 | 5.26153 | 18.20206 | 14.45523 | 11.04333 | 35.55091 | 54.47966 |
| 2003 | 97.01 | 83.18 | 80.28 | 0.47419 | 0.55301 | 0.57298 | 5.51954 | 5.26348 | 18.20878 | 14.46056 | 11.04741 | 35.56403 | 54.49977 |
| 2004 | 96.97 | 83.15 | 80.25 | 0.47437 | 0.55322 | 0.57320 | 5.52172 | 5.26556 | 18.21598 | 14.46628 | 11.05177 | 35.57809 | 54.52131 |
| 2005 | 96.93 | 83.11 | 80.22 | 0.47458 | 0.55346 | 0.57344 | 5.52405 | 5.26778 | 18.22369 | 14.47240 | 11.05645 | 35.59314 | 54.54437 |
| 2006 | 96.88 | 83.08 | 80.18 | 0.47479 | 0.55371 | 0.57370 | 5.52656 | 5.27017 | 18.23194 | 14.47895 | 11.06146 | 35.60925 | 54.56907 |
| 2007 | 96.84 | 83.04 | 80.14 | 0.47502 | 0.55398 | 0.57398 | 5.52924 | 5.27272 | 18.24078 | 14.48597 | 11.06682 | 35.62652 | 54.59553 |
| 2008 | 96.79 | 82.99 | 80.10 | 0.47527 | 0.55427 | 0.57428 | 5.53210 | 5.27546 | 18.25024 | 14.49349 | 11.07256 | 35.64501 | 54.62386 |
| 2009 | 96.73 | 82.95 | 80.06 | 0.47553 | 0.55457 | 0.57460 | 5.53518 | 5.27839 | 18.26038 | 14.50154 | 11.07871 | 35.66481 | 54.65421 |
| 2010 | 96.68 | 82.90 | 80.01 | 0.47581 | 0.55490 | 0.57494 | 5.53847 | 5.28153 | 18.27125 | 14.51017 | 11.08530 | 35.68603 | 54.68672 |

FUENTE: Elaboración propia

Cuadro N° A.5.73
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 7%, TRAMO
3. 4° CARRIL
(km 88-103)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobus | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 97.17 | 83.32 | 80.42 | 0.15436 | 0.18002 | 0.18652 | 1.79681 | 1.71345 | 5.92761 | 4.70743 | 3.59632 | 11.57736 | 17.74161 |
| 1996 | 97.15 | 83.30 | 80.40 | 0.15441 | 0.18007 | 0.18658 | 1.79730 | 1.71392 | 5.92924 | 4.70873 | 3.59732 | 11.58055 | 17.74651 |
| 1997 | 97.12 | 83.27 | 80.37 | 0.15445 | 0.18013 | 0.18663 | 1.79783 | 1.71443 | 5.93100 | 4.71012 | 3.59838 | 11.58398 | 17.75176 |
| 1998 | 97.09 | 83.25 | 80.35 | 0.15450 | 0.18018 | 0.18669 | 1.79840 | 1.71497 | 5.93287 | 4.71161 | 3.59952 | 11.58764 | 17.75737 |
| 1999 | 97.05 | 83.22 | 80.32 | 0.15455 | 0.18024 | 0.18675 | 1.79901 | 1.71555 | 5.93488 | 4.71320 | 3.60074 | 11.59156 | 17.76338 |
| 2000 | 97.02 | 83.19 | 80.29 | 0.15461 | 0.18031 | 0.18682 | 1.79966 | 1.71617 | 5.93703 | 4.71491 | 3.60204 | 11.59576 | 17.76982 |
| 2001 | 96.98 | 83.16 | 80.26 | 0.15467 | 0.18038 | 0.18689 | 1.80036 | 1.71684 | 5.93933 | 4.71674 | 3.60344 | 11.60026 | 17.77671 |
| 2002 | 96.94 | 83.12 | 80.23 | 0.15473 | 0.18045 | 0.18697 | 1.80111 | 1.71755 | 5.94180 | 4.71870 | 3.60493 | 11.60508 | 17.78409 |
| 2003 | 96.90 | 83.09 | 80.19 | 0.15480 | 0.18053 | 0.18705 | 1.80191 | 1.71831 | 5.94444 | 4.72080 | 3.60654 | 11.61023 | 17.79199 |
| 2004 | 96.85 | 83.05 | 80.15 | 0.15488 | 0.18062 | 0.18714 | 1.80277 | 1.71913 | 5.94727 | 4.72304 | 3.60825 | 11.61576 | 17.80046 |
| 2005 | 96.80 | 83.00 | 80.11 | 0.15496 | 0.18071 | 0.18724 | 1.80368 | 1.72001 | 5.95030 | 4.72545 | 3.61009 | 11.62167 | 17.80953 |
| 2006 | 96.75 | 82.96 | 80.07 | 0.15504 | 0.18081 | 0.18734 | 1.80467 | 1.72095 | 5.95354 | 4.72802 | 3.61206 | 11.62801 | 17.81924 |
| 2007 | 96.69 | 82.91 | 80.02 | 0.15513 | 0.18092 | 0.18745 | 1.80572 | 1.72195 | 5.95702 | 4.73078 | 3.61417 | 11.63480 | 17.82964 |
| 2008 | 96.63 | 82.86 | 79.97 | 0.15523 | 0.18103 | 0.18757 | 1.80685 | 1.72303 | 5.96074 | 4.73374 | 3.61643 | 11.64207 | 17.84079 |
| 2009 | 96.57 | 82.80 | 79.92 | 0.15533 | 0.18115 | 0.18769 | 1.80806 | 1.72418 | 5.96473 | 4.73691 | 3.61885 | 11.64986 | 17.85273 |
| 2010 | 96.50 | 82.74 | 79.86 | 0.15544 | 0.18128 | 0.18783 | 1.80935 | 1.72542 | 5.96900 | 4.74030 | 3.62144 | 11.65821 | 17.86552 |

FUENTE: Elaboración propia

Cuadro N° A.5.74
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 7% ,TRAMO
4. 4° CARRIL
(km 103-112)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobus | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 96.88 | 83.07 | 80.17 | 0.09290 | 0.10835 | 0.11226 | 1.08139 | 1.03123 | 3.56748 | 2.83313 | 2.16442 | 6.96774 | 10.67765 |
| 1996 | 96.83 | 83.03 | 80.13 | 0.09295 | 0.10840 | 0.11231 | 1.08193 | 1.03173 | 3.56924 | 2.83452 | 2.16548 | 6.97117 | 10.68290 |
| 1997 | 96.78 | 82.98 | 80.09 | 0.09300 | 0.10846 | 0.11237 | 1.08250 | 1.03228 | 3.57112 | 2.83602 | 2.16663 | 6.97484 | 10.68853 |
| 1998 | 96.72 | 82.94 | 80.05 | 0.09305 | 0.10852 | 0.11244 | 1.08311 | 1.03286 | 3.57313 | 2.83761 | 2.16785 | 6.97878 | 10.69456 |
| 1999 | 96.66 | 82.89 | 80.00 | 0.09311 | 0.10858 | 0.11250 | 1.08376 | 1.03348 | 3.57529 | 2.83933 | 2.16916 | 6.98299 | 10.70102 |
| 2000 | 96.60 | 82.83 | 79.95 | 0.09317 | 0.10865 | 0.11258 | 1.08446 | 1.03415 | 3.57760 | 2.84116 | 2.17056 | 6.98750 | 10.70793 |
| 2001 | 96.53 | 82.78 | 79.89 | 0.09323 | 0.10873 | 0.11265 | 1.08521 | 1.03487 | 3.58008 | 2.84313 | 2.17206 | 6.99234 | 10.71534 |
| 2002 | 96.46 | 82.71 | 79.83 | 0.09330 | 0.10881 | 0.11274 | 1.08602 | 1.03563 | 3.58273 | 2.84524 | 2.17367 | 6.99752 | 10.72329 |
| 2003 | 96.39 | 82.65 | 79.77 | 0.09337 | 0.10889 | 0.11283 | 1.08688 | 1.03646 | 3.58557 | 2.84750 | 2.17540 | 7.00307 | 10.73180 |
| 2004 | 96.30 | 82.58 | 79.70 | 0.09345 | 0.10899 | 0.11292 | 1.08780 | 1.03734 | 3.58862 | 2.84992 | 2.17724 | 7.00903 | 10.74092 |
| 2005 | 96.22 | 82.50 | 79.63 | 0.09354 | 0.10909 | 0.11303 | 1.08879 | 1.03828 | 3.59189 | 2.85251 | 2.17923 | 7.01541 | 10.75070 |
| 2006 | 96.12 | 82.42 | 79.55 | 0.09363 | 0.10919 | 0.11314 | 1.08985 | 1.03929 | 3.59539 | 2.85529 | 2.18135 | 7.02225 | 10.76118 |
| 2007 | 96.02 | 82.34 | 79.47 | 0.09373 | 0.10931 | 0.11325 | 1.09099 | 1.04038 | 3.59914 | 2.85827 | 2.18363 | 7.02958 | 10.77241 |
| 2008 | 95.92 | 82.24 | 79.38 | 0.09383 | 0.10943 | 0.11338 | 1.09221 | 1.04154 | 3.60317 | 2.86147 | 2.18607 | 7.03744 | 10.78446 |
| 2009 | 95.80 | 82.15 | 79.28 | 0.09395 | 0.10956 | 0.11352 | 1.09352 | 1.04279 | 3.60749 | 2.86490 | 2.18869 | 7.04588 | 10.79739 |
| 2010 | 95.68 | 82.04 | 79.18 | 0.09407 | 0.10970 | 0.11366 | 1.09492 | 1.04413 | 3.61212 | 2.86858 | 2.19150 | 7.05492 | 10.81125 |

FUENTE: Elaboración propia

Cuadro N° A.5.75
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 7%, TRAMO
5. 4° CARRIL
(km 112-115)

| Año | Velocidad promedio (km/h). Autos, camionetas y autobuses | Velocidad promedio (km/h). Camiones livianos | Velocidad promedio (km/h). Camiones pesados | Tiempo promedio en horas Autos, camionetas y autobuses | Tiempo promedio en horas Camiones livianos | Tiempo promedio en horas Camiones pesados | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Autobuses Choferes | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros autobus | Total \$/anuales |
|------|--|--|---|--|--|---|--------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| 1995 | 97.17 | 83.32 | 80.42 | 0.03087 | 0.03600 | 0.03730 | 0.35936 | 0.34269 | 1.18552 | 0.94149 | 0.71926 | 2.31547 | 3.54832 |
| 1996 | 97.15 | 83.30 | 80.40 | 0.03088 | 0.03601 | 0.03732 | 0.35946 | 0.34278 | 1.18585 | 0.94175 | 0.71946 | 2.31611 | 3.54930 |
| 1997 | 97.12 | 83.27 | 80.37 | 0.03089 | 0.03603 | 0.03733 | 0.35957 | 0.34289 | 1.18620 | 0.94202 | 0.71968 | 2.31680 | 3.55035 |
| 1998 | 97.09 | 83.25 | 80.35 | 0.03090 | 0.03604 | 0.03734 | 0.35968 | 0.34299 | 1.18657 | 0.94232 | 0.71990 | 2.31753 | 3.55147 |
| 1999 | 97.05 | 83.22 | 80.32 | 0.03091 | 0.03605 | 0.03735 | 0.35980 | 0.34311 | 1.18698 | 0.94264 | 0.72015 | 2.31831 | 3.55268 |
| 2000 | 97.02 | 83.19 | 80.29 | 0.03092 | 0.03606 | 0.03736 | 0.35993 | 0.34323 | 1.18741 | 0.94298 | 0.72041 | 2.31915 | 3.55396 |
| 2001 | 96.98 | 83.16 | 80.26 | 0.03093 | 0.03608 | 0.03738 | 0.36007 | 0.34337 | 1.18787 | 0.94335 | 0.72069 | 2.32005 | 3.55534 |
| 2002 | 96.94 | 83.12 | 80.23 | 0.03095 | 0.03609 | 0.03739 | 0.36022 | 0.34351 | 1.18836 | 0.94374 | 0.72099 | 2.32102 | 3.55682 |
| 2003 | 96.90 | 83.09 | 80.19 | 0.03096 | 0.03611 | 0.03741 | 0.36038 | 0.34366 | 1.18889 | 0.94416 | 0.72131 | 2.32205 | 3.55840 |
| 2004 | 96.85 | 83.05 | 80.15 | 0.03098 | 0.03612 | 0.03743 | 0.36055 | 0.34383 | 1.18945 | 0.94461 | 0.72165 | 2.32315 | 3.56009 |
| 2005 | 96.80 | 83.00 | 80.11 | 0.03099 | 0.03614 | 0.03745 | 0.36074 | 0.34400 | 1.19006 | 0.94509 | 0.72202 | 2.32433 | 3.56191 |
| 2006 | 96.75 | 82.96 | 80.07 | 0.03101 | 0.03616 | 0.03747 | 0.36093 | 0.34419 | 1.19071 | 0.94560 | 0.72241 | 2.32560 | 3.56385 |
| 2007 | 96.69 | 82.91 | 80.02 | 0.03103 | 0.03618 | 0.03749 | 0.36114 | 0.34439 | 1.19140 | 0.94616 | 0.72283 | 2.32696 | 3.56593 |
| 2008 | 96.63 | 82.86 | 79.97 | 0.03105 | 0.03621 | 0.03751 | 0.36137 | 0.34461 | 1.19215 | 0.94675 | 0.72329 | 2.32841 | 3.56816 |
| 2009 | 96.57 | 82.80 | 79.92 | 0.03107 | 0.03623 | 0.03754 | 0.36161 | 0.34484 | 1.19295 | 0.94738 | 0.72377 | 2.32997 | 3.57055 |
| 2010 | 96.50 | 82.74 | 79.86 | 0.03109 | 0.03626 | 0.03757 | 0.36187 | 0.34508 | 1.19380 | 0.94806 | 0.72429 | 2.33164 | 3.57310 |

FUENTE: Elaboración propia

Cuadro N° A.5.76
PROYECTO AMPLIACIÓN A UN 4° CARRIL VS 3^{er}. CARRIL.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 7%. TRAMO 1

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 2.52041 | 2.51615 | 0.00426 | 2.40348 | 2.39942 | 0.00406 | 6.60211 | 6.59202 | 0.01010 | 5.04380 | 5.03609 | 0.00771 | 8.31475 | 8.30069 | 0.01406 | 16.23974 | 16.21229 | 0.02745 |
| 1996 | 2.52145 | 2.51688 | 0.00456 | 2.40447 | 2.40012 | 0.00435 | 6.60484 | 6.59395 | 0.01088 | 5.04588 | 5.03757 | 0.00832 | 8.31818 | 8.30313 | 0.01505 | 16.24644 | 16.21704 | 0.02940 |
| 1997 | 2.52256 | 2.51768 | 0.00489 | 2.40553 | 2.40088 | 0.00466 | 6.60775 | 6.59602 | 0.01173 | 5.04811 | 5.03915 | 0.00896 | 8.32185 | 8.30573 | 0.01612 | 16.25361 | 16.22213 | 0.03148 |
| 1998 | 2.52375 | 2.51852 | 0.00523 | 2.40667 | 2.40168 | 0.00499 | 6.61088 | 6.59824 | 0.01264 | 5.05050 | 5.04084 | 0.00965 | 8.32578 | 8.30852 | 0.01726 | 16.26129 | 16.22759 | 0.03371 |
| 1999 | 2.52503 | 2.51943 | 0.00560 | 2.40789 | 2.40255 | 0.00534 | 6.61422 | 6.60061 | 0.01361 | 5.05305 | 5.04266 | 0.01040 | 8.33000 | 8.31151 | 0.01848 | 16.26952 | 16.23342 | 0.03610 |
| 2000 | 2.52640 | 2.52040 | 0.00600 | 2.40919 | 2.40347 | 0.00572 | 6.61781 | 6.60316 | 0.01465 | 5.05579 | 5.04460 | 0.01119 | 8.33451 | 8.31471 | 0.01979 | 16.27834 | 16.23967 | 0.03866 |
| 2001 | 2.52786 | 2.52144 | 0.00643 | 2.41059 | 2.40446 | 0.00613 | 6.62164 | 6.60588 | 0.01577 | 5.05872 | 5.04668 | 0.01205 | 8.33934 | 8.31814 | 0.02120 | 16.28778 | 16.24637 | 0.04141 |
| 2002 | 2.52943 | 2.52255 | 0.00688 | 2.41209 | 2.40552 | 0.00656 | 6.62576 | 6.60879 | 0.01696 | 5.06187 | 5.04891 | 0.01296 | 8.34452 | 8.32181 | 0.02271 | 16.29789 | 16.25354 | 0.04435 |
| 2003 | 2.53111 | 2.52374 | 0.00737 | 2.41369 | 2.40666 | 0.00703 | 6.63016 | 6.61191 | 0.01825 | 5.06523 | 5.05129 | 0.01394 | 8.35007 | 8.32574 | 0.02433 | 16.30873 | 16.26121 | 0.04751 |
| 2004 | 2.53292 | 2.52502 | 0.00790 | 2.41541 | 2.40788 | 0.00753 | 6.63488 | 6.61526 | 0.01962 | 5.06884 | 5.05384 | 0.01499 | 8.35601 | 8.32995 | 0.02606 | 16.32034 | 16.26944 | 0.05090 |
| 2005 | 2.53485 | 2.52638 | 0.00846 | 2.41725 | 2.40918 | 0.00807 | 6.63994 | 6.61884 | 0.02110 | 5.07270 | 5.05658 | 0.01612 | 8.36238 | 8.33446 | 0.02792 | 16.33278 | 16.27824 | 0.05454 |
| 2006 | 2.53692 | 2.52785 | 0.00907 | 2.41922 | 2.41058 | 0.00865 | 6.64536 | 6.62267 | 0.02269 | 5.07684 | 5.05951 | 0.01733 | 8.36921 | 8.33929 | 0.02992 | 16.34611 | 16.28768 | 0.05843 |
| 2007 | 2.53913 | 2.52942 | 0.00972 | 2.42134 | 2.41207 | 0.00927 | 6.65117 | 6.62678 | 0.02439 | 5.08128 | 5.06265 | 0.01863 | 8.37653 | 8.34447 | 0.03206 | 16.36040 | 16.29779 | 0.06262 |
| 2008 | 2.54151 | 2.53110 | 0.01042 | 2.42361 | 2.41367 | 0.00993 | 6.65740 | 6.63119 | 0.02621 | 5.08604 | 5.06601 | 0.02002 | 8.38437 | 8.35001 | 0.03436 | 16.37572 | 16.30861 | 0.06711 |
| 2009 | 2.54406 | 2.53290 | 0.01116 | 2.42604 | 2.41539 | 0.01065 | 6.66407 | 6.63590 | 0.02817 | 5.09114 | 5.06962 | 0.02152 | 8.39278 | 8.35595 | 0.03683 | 16.39215 | 16.32022 | 0.07193 |
| 2010 | 2.54679 | 2.53483 | 0.01197 | 2.42864 | 2.41723 | 0.01141 | 6.67123 | 6.64096 | 0.03027 | 5.09661 | 5.07348 | 0.02313 | 8.40179 | 8.36232 | 0.03948 | 16.40976 | 16.33265 | 0.07711 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.71 y A. 5.21

Cuadro N° A.5.77
PROYECTO AMPLIACIÓN A UN 4° CARRIL VS 3^{er}. CARRIL.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 7%. TRAMO 2

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 5.51384 | 5.50655 | 0.00729 | 5.25804 | 5.25109 | 0.00695 | 14.44563 | 14.42654 | 0.01910 | 11.03600 | 11.02141 | 0.01459 | 18.18998 | 18.16593 | 0.02405 | 35.52731 | 35.48034 | 0.04697 |
| 1996 | 5.51562 | 5.50781 | 0.00780 | 5.25974 | 5.25230 | 0.00744 | 14.45029 | 14.42984 | 0.02045 | 11.03956 | 11.02394 | 0.01562 | 18.19585 | 18.17010 | 0.02575 | 35.53877 | 35.48848 | 0.05029 |
| 1997 | 5.51752 | 5.50916 | 0.00836 | 5.26155 | 5.25358 | 0.00797 | 14.45528 | 14.43339 | 0.02189 | 11.04337 | 11.02665 | 0.01672 | 18.20213 | 18.17456 | 0.02757 | 35.55104 | 35.49720 | 0.05384 |
| 1998 | 5.51956 | 5.51061 | 0.00895 | 5.26350 | 5.25497 | 0.00853 | 14.46062 | 14.43718 | 0.02344 | 11.04745 | 11.02954 | 0.01791 | 18.20885 | 18.17934 | 0.02951 | 35.56417 | 35.50652 | 0.05765 |
| 1999 | 5.52174 | 5.51216 | 0.00958 | 5.26558 | 5.25644 | 0.00913 | 14.46634 | 14.44124 | 0.02510 | 11.05182 | 11.03265 | 0.01917 | 18.21606 | 18.18445 | 0.03160 | 35.57823 | 35.51651 | 0.06172 |
| 2000 | 5.52408 | 5.51382 | 0.01026 | 5.26781 | 5.25803 | 0.00978 | 14.47246 | 14.44559 | 0.02687 | 11.05650 | 11.03597 | 0.02053 | 18.22377 | 18.18993 | 0.03384 | 35.59329 | 35.52720 | 0.06609 |
| 2001 | 5.52658 | 5.51560 | 0.01098 | 5.27019 | 5.25972 | 0.01047 | 14.47902 | 14.45024 | 0.02878 | 11.06151 | 11.03952 | 0.02198 | 18.23202 | 18.19579 | 0.03624 | 35.60942 | 35.53865 | 0.07077 |
| 2002 | 5.52926 | 5.51750 | 0.01176 | 5.27275 | 5.26153 | 0.01122 | 14.48604 | 14.45523 | 0.03082 | 11.06687 | 11.04333 | 0.02354 | 18.24087 | 18.20206 | 0.03880 | 35.62670 | 35.55091 | 0.07579 |
| 2003 | 5.53213 | 5.51954 | 0.01260 | 5.27549 | 5.26348 | 0.01201 | 14.49357 | 14.46056 | 0.03300 | 11.07262 | 11.04741 | 0.02521 | 18.25034 | 18.20878 | 0.04156 | 35.64520 | 35.56403 | 0.08117 |
| 2004 | 5.53521 | 5.52172 | 0.01349 | 5.27842 | 5.26556 | 0.01287 | 14.50163 | 14.46628 | 0.03535 | 11.07878 | 11.05177 | 0.02700 | 18.26049 | 18.21598 | 0.04451 | 35.66502 | 35.57809 | 0.08693 |
| 2005 | 5.53851 | 5.52405 | 0.01445 | 5.28156 | 5.26778 | 0.01378 | 14.51026 | 14.47240 | 0.03786 | 11.08537 | 11.05645 | 0.02892 | 18.27136 | 18.22369 | 0.04767 | 35.68625 | 35.59314 | 0.09311 |
| 2006 | 5.54204 | 5.52656 | 0.01548 | 5.28493 | 5.27017 | 0.01476 | 14.51951 | 14.47895 | 0.04055 | 11.09244 | 11.06146 | 0.03098 | 18.28300 | 18.23194 | 0.05107 | 35.70899 | 35.60925 | 0.09974 |
| 2007 | 5.54582 | 5.52924 | 0.01658 | 5.28854 | 5.27272 | 0.01581 | 14.52941 | 14.48597 | 0.04344 | 11.10001 | 11.06682 | 0.03319 | 18.29548 | 18.24078 | 0.05470 | 35.73336 | 35.62652 | 0.10684 |
| 2008 | 5.54987 | 5.53210 | 0.01777 | 5.29240 | 5.27546 | 0.01694 | 14.54003 | 14.49349 | 0.04654 | 11.10812 | 11.07256 | 0.03556 | 18.30885 | 18.25024 | 0.05861 | 35.75947 | 35.64501 | 0.11447 |
| 2009 | 5.55421 | 5.53518 | 0.01903 | 5.29654 | 5.27839 | 0.01815 | 14.55141 | 14.50154 | 0.04987 | 11.11681 | 11.07871 | 0.03810 | 18.32318 | 18.26038 | 0.06279 | 35.78745 | 35.66481 | 0.12264 |
| 2010 | 5.55887 | 5.53847 | 0.02040 | 5.30098 | 5.28153 | 0.01945 | 14.56360 | 14.51017 | 0.05343 | 11.12613 | 11.08530 | 0.04082 | 18.33853 | 18.27125 | 0.06728 | 35.81744 | 35.68603 | 0.13141 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.72 y A. 5.22

Cuadro N° A.5.78
PROYECTO AMPLIACIÓN A UN 4° CARRIL VS 3^{er}. CARRIL.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 7%. TRAMO 3

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.79967 | 1.79681 | 0.00286 | 1.71618 | 1.71345 | 0.00273 | 4.71493 | 4.70743 | 0.00750 | 3.60206 | 3.59632 | 0.00573 | 5.93705 | 5.92761 | 0.00945 | 11.59581 | 11.57736 | 0.01845 |
| 1996 | 1.80037 | 1.79730 | 0.00307 | 1.71685 | 1.71392 | 0.00292 | 4.71676 | 4.70873 | 0.00803 | 3.60345 | 3.59732 | 0.00614 | 5.93936 | 5.92924 | 0.01011 | 11.60031 | 11.58055 | 0.01975 |
| 1997 | 1.80112 | 1.79783 | 0.00328 | 1.71756 | 1.71443 | 0.00313 | 4.71872 | 4.71012 | 0.00860 | 3.60495 | 3.59838 | 0.00657 | 5.94182 | 5.93100 | 0.01083 | 11.60513 | 11.58398 | 0.02115 |
| 1998 | 1.80192 | 1.79840 | 0.00351 | 1.71832 | 1.71497 | 0.00335 | 4.72082 | 4.71161 | 0.00921 | 3.60655 | 3.59952 | 0.00704 | 5.94447 | 5.93287 | 0.01160 | 11.61029 | 11.58764 | 0.02265 |
| 1999 | 1.80277 | 1.79901 | 0.00376 | 1.71914 | 1.71555 | 0.00359 | 4.72307 | 4.71320 | 0.00986 | 3.60827 | 3.60074 | 0.00753 | 5.94730 | 5.93488 | 0.01242 | 11.61582 | 11.59156 | 0.02425 |
| 2000 | 1.80369 | 1.79966 | 0.00403 | 1.72002 | 1.71617 | 0.00384 | 4.72547 | 4.71491 | 0.01056 | 3.61011 | 3.60204 | 0.00807 | 5.95033 | 5.93703 | 0.01330 | 11.62174 | 11.59576 | 0.02597 |
| 2001 | 1.80468 | 1.80036 | 0.00432 | 1.72096 | 1.71684 | 0.00412 | 4.72805 | 4.71674 | 0.01131 | 3.61208 | 3.60344 | 0.00864 | 5.95358 | 5.93933 | 0.01424 | 11.62808 | 11.60026 | 0.02782 |
| 2002 | 1.80573 | 1.80111 | 0.00462 | 1.72196 | 1.71755 | 0.00441 | 4.73081 | 4.71870 | 0.01211 | 3.61419 | 3.60493 | 0.00926 | 5.95705 | 5.94180 | 0.01525 | 11.63487 | 11.60508 | 0.02979 |
| 2003 | 1.80686 | 1.80191 | 0.00495 | 1.72304 | 1.71831 | 0.00472 | 4.73377 | 4.72080 | 0.01298 | 3.61645 | 3.60654 | 0.00991 | 5.96078 | 5.94444 | 0.01634 | 11.64215 | 11.61023 | 0.03191 |
| 2004 | 1.80807 | 1.80277 | 0.00531 | 1.72419 | 1.71913 | 0.00506 | 4.73694 | 4.72304 | 0.01390 | 3.61887 | 3.60825 | 0.01062 | 5.96477 | 5.94727 | 0.01750 | 11.64994 | 11.61576 | 0.03419 |
| 2005 | 1.80937 | 1.80368 | 0.00568 | 1.72543 | 1.72001 | 0.00542 | 4.74034 | 4.72545 | 0.01489 | 3.62147 | 3.61009 | 0.01138 | 5.96905 | 5.95030 | 0.01875 | 11.65830 | 11.62167 | 0.03663 |
| 2006 | 1.81076 | 1.80467 | 0.00609 | 1.72675 | 1.72095 | 0.00581 | 4.74398 | 4.72802 | 0.01596 | 3.62425 | 3.61206 | 0.01219 | 5.97363 | 5.95354 | 0.02009 | 11.66725 | 11.62801 | 0.03924 |
| 2007 | 1.81225 | 1.80572 | 0.00653 | 1.72817 | 1.72195 | 0.00622 | 4.74788 | 4.73078 | 0.01710 | 3.62723 | 3.61417 | 0.01306 | 5.97855 | 5.95702 | 0.02153 | 11.67685 | 11.63480 | 0.04205 |
| 2008 | 1.81384 | 1.80685 | 0.00699 | 1.72970 | 1.72303 | 0.00667 | 4.75206 | 4.73374 | 0.01832 | 3.63042 | 3.61643 | 0.01400 | 5.98381 | 5.96074 | 0.02307 | 11.68713 | 11.64207 | 0.04506 |
| 2009 | 1.81555 | 1.80806 | 0.00749 | 1.73133 | 1.72418 | 0.00715 | 4.75654 | 4.73691 | 0.01963 | 3.63385 | 3.61885 | 0.01500 | 5.98945 | 5.96473 | 0.02472 | 11.69815 | 11.64986 | 0.04829 |
| 2010 | 1.81739 | 1.80935 | 0.00803 | 1.73308 | 1.72542 | 0.00766 | 4.76135 | 4.74030 | 0.02105 | 3.63752 | 3.62144 | 0.01608 | 5.99551 | 5.96900 | 0.02650 | 11.70997 | 11.65821 | 0.05176 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.73 y A. 5.23

Cuadro N° A.5.79
PROYECTO AMPLIACIÓN A UN 4° CARRIL VS 3^{er}. CARRIL.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 7%. TRAMO 4

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.08340 | 1.08139 | 0.00200 | 1.03314 | 1.03123 | 0.00191 | 2.83838 | 2.83313 | 0.00525 | 2.16843 | 2.16442 | 0.00401 | 3.57409 | 3.56748 | 0.00661 | 6.98065 | 6.96774 | 0.01291 |
| 1996 | 1.08407 | 1.08193 | 0.00215 | 1.03378 | 1.03173 | 0.00205 | 2.84014 | 2.83452 | 0.00562 | 2.16978 | 2.16548 | 0.00429 | 3.57632 | 3.56924 | 0.00708 | 6.98499 | 6.97117 | 0.01382 |
| 1997 | 1.08479 | 1.08250 | 0.00230 | 1.03447 | 1.03228 | 0.00219 | 2.84204 | 2.83602 | 0.00602 | 2.17123 | 2.16663 | 0.00460 | 3.57870 | 3.57112 | 0.00758 | 6.98965 | 6.97484 | 0.01481 |
| 1998 | 1.08557 | 1.08311 | 0.00246 | 1.03521 | 1.03286 | 0.00235 | 2.84407 | 2.83761 | 0.00645 | 2.17278 | 2.16785 | 0.00493 | 3.58126 | 3.57313 | 0.00812 | 6.99464 | 6.97878 | 0.01587 |
| 1999 | 1.08640 | 1.08376 | 0.00264 | 1.03600 | 1.03348 | 0.00252 | 2.84624 | 2.83933 | 0.00691 | 2.17444 | 2.16916 | 0.00528 | 3.58399 | 3.57529 | 0.00870 | 6.99999 | 6.98299 | 0.01700 |
| 2000 | 1.08729 | 1.08446 | 0.00283 | 1.03685 | 1.03415 | 0.00270 | 2.84857 | 2.84116 | 0.00741 | 2.17622 | 2.17056 | 0.00566 | 3.58693 | 3.57760 | 0.00933 | 7.00572 | 6.98750 | 0.01822 |
| 2001 | 1.08824 | 1.08521 | 0.00303 | 1.03776 | 1.03487 | 0.00289 | 2.85107 | 2.84313 | 0.00794 | 2.17812 | 2.17206 | 0.00606 | 3.59007 | 3.58008 | 0.01000 | 7.01186 | 6.99234 | 0.01952 |
| 2002 | 1.08926 | 1.08602 | 0.00325 | 1.03873 | 1.03563 | 0.00310 | 2.85374 | 2.84524 | 0.00851 | 2.18017 | 2.17367 | 0.00650 | 3.59344 | 3.58273 | 0.01071 | 7.01845 | 6.99752 | 0.02092 |
| 2003 | 1.09036 | 1.08688 | 0.00348 | 1.03977 | 1.03646 | 0.00332 | 2.85662 | 2.84750 | 0.00912 | 2.18236 | 2.17540 | 0.00697 | 3.59706 | 3.58557 | 0.01148 | 7.02550 | 7.00307 | 0.02243 |
| 2004 | 1.09153 | 1.08780 | 0.00373 | 1.04089 | 1.03734 | 0.00356 | 2.85969 | 2.84992 | 0.00978 | 2.18471 | 2.17724 | 0.00747 | 3.60093 | 3.58862 | 0.01231 | 7.03307 | 7.00903 | 0.02405 |
| 2005 | 1.09279 | 1.08879 | 0.00400 | 1.04210 | 1.03828 | 0.00382 | 2.86298 | 2.85251 | 0.01048 | 2.18723 | 2.17923 | 0.00801 | 3.60509 | 3.59189 | 0.01320 | 7.04119 | 7.01541 | 0.02578 |
| 2006 | 1.09414 | 1.08985 | 0.00429 | 1.04338 | 1.03929 | 0.00409 | 2.86653 | 2.85529 | 0.01124 | 2.18994 | 2.18135 | 0.00859 | 3.60955 | 3.59539 | 0.01416 | 7.04989 | 7.02225 | 0.02765 |
| 2007 | 1.09559 | 1.09099 | 0.00460 | 1.04477 | 1.04038 | 0.00439 | 2.87033 | 2.85827 | 0.01206 | 2.19284 | 2.18363 | 0.00921 | 3.61433 | 3.59914 | 0.01518 | 7.05923 | 7.02958 | 0.02965 |
| 2008 | 1.09715 | 1.09221 | 0.00494 | 1.04625 | 1.04154 | 0.00471 | 2.87440 | 2.86147 | 0.01293 | 2.19595 | 2.18607 | 0.00988 | 3.61946 | 3.60317 | 0.01629 | 7.06925 | 7.03744 | 0.03181 |
| 2009 | 1.09882 | 1.09352 | 0.00530 | 1.04784 | 1.04279 | 0.00505 | 2.87878 | 2.86490 | 0.01388 | 2.19929 | 2.18869 | 0.01060 | 3.62496 | 3.60749 | 0.01747 | 7.08000 | 7.04588 | 0.03413 |
| 2010 | 1.10061 | 1.09492 | 0.00568 | 1.04955 | 1.04413 | 0.00542 | 2.88347 | 2.86858 | 0.01489 | 2.20288 | 2.19150 | 0.01138 | 3.63087 | 3.61212 | 0.01875 | 7.09155 | 7.05492 | 0.03662 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.74 y A. 5.24

CUADRO N° A.5.80
PROYECTO AMPLIACIÓN A UN 4° CARRIL VS 3^{er}. CARRIL.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 7%. TRAMO 5

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 0.35987 | 0.35936 | 0.00051 | 0.34318 | 0.34269 | 0.00049 | 0.94283 | 0.94149 | 0.00134 | 0.72029 | 0.71926 | 0.00102 | 1.18721 | 1.18552 | 0.00169 | 2.31877 | 2.31547 | 0.00330 |
| 1996 | 0.36001 | 0.35946 | 0.00055 | 0.34331 | 0.34278 | 0.00052 | 0.94318 | 0.94175 | 0.00144 | 0.72056 | 0.71946 | 0.00110 | 1.18766 | 1.18585 | 0.00181 | 2.31964 | 2.31611 | 0.00353 |
| 1997 | 0.36015 | 0.35957 | 0.00059 | 0.34344 | 0.34289 | 0.00056 | 0.94356 | 0.94202 | 0.00154 | 0.72085 | 0.71968 | 0.00117 | 1.18813 | 1.18620 | 0.00193 | 2.32057 | 2.31680 | 0.00378 |
| 1998 | 0.36031 | 0.35968 | 0.00063 | 0.34359 | 0.34299 | 0.00060 | 0.94397 | 0.94232 | 0.00165 | 0.72116 | 0.71990 | 0.00126 | 1.18865 | 1.18657 | 0.00207 | 2.32157 | 2.31753 | 0.00405 |
| 1999 | 0.36047 | 0.35980 | 0.00067 | 0.34375 | 0.34311 | 0.00064 | 0.94440 | 0.94264 | 0.00176 | 0.72149 | 0.72015 | 0.00135 | 1.18919 | 1.18698 | 0.00222 | 2.32265 | 2.31831 | 0.00433 |
| 2000 | 0.36065 | 0.35993 | 0.00072 | 0.34392 | 0.34323 | 0.00069 | 0.94487 | 0.94298 | 0.00189 | 0.72185 | 0.72041 | 0.00144 | 1.18978 | 1.18741 | 0.00238 | 2.32379 | 2.31915 | 0.00464 |
| 2001 | 0.36084 | 0.36007 | 0.00077 | 0.34410 | 0.34337 | 0.00074 | 0.94537 | 0.94335 | 0.00202 | 0.72223 | 0.72069 | 0.00154 | 1.19041 | 1.18787 | 0.00254 | 2.32502 | 2.32005 | 0.00497 |
| 2002 | 0.36105 | 0.36022 | 0.00083 | 0.34430 | 0.34351 | 0.00079 | 0.94590 | 0.94374 | 0.00216 | 0.72264 | 0.72099 | 0.00165 | 1.19109 | 1.18836 | 0.00273 | 2.32634 | 2.32102 | 0.00532 |
| 2003 | 0.36127 | 0.36038 | 0.00088 | 0.34451 | 0.34366 | 0.00084 | 0.94648 | 0.94416 | 0.00232 | 0.72308 | 0.72131 | 0.00177 | 1.19181 | 1.18889 | 0.00292 | 2.32775 | 2.32205 | 0.00570 |
| 2004 | 0.36150 | 0.36055 | 0.00095 | 0.34473 | 0.34383 | 0.00090 | 0.94709 | 0.94461 | 0.00248 | 0.72355 | 0.72165 | 0.00190 | 1.19258 | 1.18945 | 0.00313 | 2.32926 | 2.32315 | 0.00611 |
| 2005 | 0.36175 | 0.36074 | 0.00102 | 0.34497 | 0.34400 | 0.00097 | 0.94775 | 0.94509 | 0.00268 | 0.72405 | 0.72202 | 0.00203 | 1.19341 | 1.19006 | 0.00335 | 2.33088 | 2.32433 | 0.00654 |
| 2006 | 0.36202 | 0.36093 | 0.00109 | 0.34523 | 0.34419 | 0.00104 | 0.94846 | 0.94560 | 0.00285 | 0.72459 | 0.72241 | 0.00218 | 1.19430 | 1.19071 | 0.00359 | 2.33261 | 2.32560 | 0.00701 |
| 2007 | 0.36231 | 0.36114 | 0.00117 | 0.34550 | 0.34439 | 0.00111 | 0.94921 | 0.94616 | 0.00305 | 0.72517 | 0.72283 | 0.00233 | 1.19525 | 1.19140 | 0.00385 | 2.33447 | 2.32696 | 0.00751 |
| 2008 | 0.36262 | 0.36137 | 0.00125 | 0.34580 | 0.34461 | 0.00119 | 0.95002 | 0.94675 | 0.00327 | 0.72579 | 0.72329 | 0.00250 | 1.19627 | 1.19215 | 0.00412 | 2.33646 | 2.32841 | 0.00805 |
| 2009 | 0.36295 | 0.36161 | 0.00134 | 0.34611 | 0.34484 | 0.00128 | 0.95089 | 0.94738 | 0.00351 | 0.72645 | 0.72377 | 0.00268 | 1.19736 | 1.19295 | 0.00442 | 2.33860 | 2.32997 | 0.00863 |
| 2010 | 0.36331 | 0.36187 | 0.00143 | 0.34645 | 0.34508 | 0.00137 | 0.95182 | 0.94806 | 0.00376 | 0.72716 | 0.72429 | 0.00287 | 1.19853 | 1.19380 | 0.00473 | 2.34089 | 2.33164 | 0.00925 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.75 y A. 5.25

Cuadro N° A.5.81
COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 10% ,TRAMO 1. 4°
CARRIL
(km 21-42)

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobuses | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobús | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobús | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 97.15 | 83.30 | 80.40 | 0.21616 | 0.25209 | 0.26120 | 2.51615 | 2.39942 | 8.30069 | 6.59202 | 5.03609 | 16.21229 | 24.84437 |
| 1996 | 97.11 | 83.27 | 80.37 | 0.21625 | 0.25220 | 0.26131 | 2.51720 | 2.40042 | 8.30417 | 6.59478 | 5.03820 | 16.21908 | 24.85478 |
| 1997 | 97.06 | 83.23 | 80.33 | 0.21635 | 0.25232 | 0.26143 | 2.51836 | 2.40153 | 8.30800 | 6.59782 | 5.04053 | 16.22656 | 24.86624 |
| 1998 | 97.01 | 83.19 | 80.29 | 0.21646 | 0.25244 | 0.26156 | 2.51964 | 2.40275 | 8.31222 | 6.60117 | 5.04309 | 16.23480 | 24.87887 |
| 1999 | 96.96 | 83.14 | 80.24 | 0.21658 | 0.25259 | 0.26171 | 2.52105 | 2.40409 | 8.31686 | 6.60486 | 5.04590 | 16.24387 | 24.89277 |
| 2000 | 96.90 | 83.09 | 80.19 | 0.21672 | 0.25274 | 0.26187 | 2.52260 | 2.40557 | 8.32198 | 6.60892 | 5.04901 | 16.25386 | 24.90808 |
| 2001 | 96.83 | 83.03 | 80.14 | 0.21686 | 0.25291 | 0.26204 | 2.52431 | 2.40720 | 8.32761 | 6.61340 | 5.05242 | 16.26486 | 24.92494 |
| 2002 | 96.76 | 82.97 | 80.08 | 0.21703 | 0.25310 | 0.26224 | 2.52619 | 2.40899 | 8.33381 | 6.61833 | 5.05619 | 16.27698 | 24.94351 |
| 2003 | 96.68 | 82.90 | 80.01 | 0.21720 | 0.25331 | 0.26246 | 2.52826 | 2.41097 | 8.34065 | 6.62375 | 5.06034 | 16.29033 | 24.96397 |
| 2004 | 96.60 | 82.83 | 79.94 | 0.21740 | 0.25354 | 0.26269 | 2.53054 | 2.41315 | 8.34818 | 6.62974 | 5.06491 | 16.30505 | 24.98652 |
| 2005 | 96.50 | 82.75 | 79.86 | 0.21762 | 0.25379 | 0.26295 | 2.53306 | 2.41555 | 8.35649 | 6.63633 | 5.06994 | 16.32126 | 25.01137 |
| 2006 | 96.39 | 82.66 | 79.77 | 0.21786 | 0.25407 | 0.26324 | 2.53583 | 2.41819 | 8.36564 | 6.64360 | 5.07550 | 16.33914 | 25.03876 |
| 2007 | 96.28 | 82.56 | 79.68 | 0.21812 | 0.25437 | 0.26356 | 2.53889 | 2.42111 | 8.37573 | 6.65161 | 5.08162 | 16.35884 | 25.06896 |
| 2008 | 96.15 | 82.45 | 79.57 | 0.21841 | 0.25471 | 0.26391 | 2.54227 | 2.42433 | 8.38686 | 6.66045 | 5.08837 | 16.38058 | 25.10226 |
| 2009 | 96.01 | 82.33 | 79.46 | 0.21873 | 0.25508 | 0.26430 | 2.54599 | 2.42787 | 8.39913 | 6.67020 | 5.09582 | 16.40455 | 25.13900 |
| 2010 | 95.86 | 82.19 | 79.33 | 0.21908 | 0.25550 | 0.26472 | 2.55009 | 2.43179 | 8.41267 | 6.68095 | 5.10403 | 16.43100 | 25.17954 |

FUENTE: Elaboración propia

Cuadro N° A.5.82

COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 10% ,TRAMO 2. 4°

CARRIL
(km 42-88)

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobús | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobús | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobús | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 97.24 | 83.38 | 80.47 | 0.47307 | 0.55171 | 0.57163 | 5.50655 | 5.25109 | 18.16593 | 14.42654 | 11.02141 | 35.48034 | 54.37152 |
| 1996 | 97.21 | 83.35 | 80.45 | 0.47323 | 0.55189 | 0.57182 | 5.50835 | 5.25281 | 18.17189 | 14.43126 | 11.02502 | 35.49197 | 54.38934 |
| 1997 | 97.17 | 83.32 | 80.42 | 0.47340 | 0.55208 | 0.57202 | 5.51034 | 5.25471 | 18.17844 | 14.43647 | 11.02900 | 35.50477 | 54.40896 |
| 1998 | 97.13 | 83.29 | 80.38 | 0.47358 | 0.55230 | 0.57225 | 5.51253 | 5.25679 | 18.18566 | 14.44220 | 11.03338 | 35.51886 | 54.43055 |
| 1999 | 97.09 | 83.25 | 80.35 | 0.47379 | 0.55255 | 0.57250 | 5.51494 | 5.25909 | 18.19360 | 14.44851 | 11.03820 | 35.53438 | 54.45433 |
| 2000 | 97.04 | 83.21 | 80.31 | 0.47402 | 0.55281 | 0.57277 | 5.51759 | 5.26162 | 18.20235 | 14.45545 | 11.04350 | 35.55146 | 54.48051 |
| 2001 | 96.99 | 83.17 | 80.27 | 0.47427 | 0.55310 | 0.57308 | 5.52051 | 5.26440 | 18.21198 | 14.46310 | 11.04935 | 35.57027 | 54.50933 |
| 2002 | 96.93 | 83.12 | 80.22 | 0.47455 | 0.55343 | 0.57341 | 5.52372 | 5.26747 | 18.22258 | 14.47152 | 11.05578 | 35.59098 | 54.54107 |
| 2003 | 96.87 | 83.07 | 80.17 | 0.47485 | 0.55378 | 0.57378 | 5.52726 | 5.27084 | 18.23426 | 14.48080 | 11.06287 | 35.61379 | 54.57602 |
| 2004 | 96.80 | 83.01 | 80.11 | 0.47519 | 0.55417 | 0.57418 | 5.53116 | 5.27456 | 18.24713 | 14.49101 | 11.07067 | 35.63892 | 54.61453 |
| 2005 | 96.73 | 82.94 | 80.05 | 0.47555 | 0.55460 | 0.57463 | 5.53546 | 5.27866 | 18.26130 | 14.50227 | 11.07927 | 35.66660 | 54.65695 |
| 2006 | 96.65 | 82.87 | 79.98 | 0.47596 | 0.55508 | 0.57512 | 5.54019 | 5.28317 | 18.27691 | 14.51467 | 11.08874 | 35.69709 | 54.70368 |
| 2007 | 96.56 | 82.79 | 79.91 | 0.47641 | 0.55560 | 0.57566 | 5.54540 | 5.28814 | 18.29412 | 14.52833 | 11.09918 | 35.73070 | 54.75518 |
| 2008 | 96.46 | 82.71 | 79.83 | 0.47690 | 0.55617 | 0.57626 | 5.55115 | 5.29363 | 18.31308 | 14.54339 | 11.11069 | 35.76774 | 54.81195 |
| 2009 | 96.35 | 82.61 | 79.73 | 0.47745 | 0.55681 | 0.57692 | 5.55749 | 5.29967 | 18.33399 | 14.56000 | 11.12337 | 35.80858 | 54.87452 |
| 2010 | 96.22 | 82.51 | 79.63 | 0.47805 | 0.55751 | 0.57764 | 5.56448 | 5.30633 | 18.35704 | 14.57831 | 11.13736 | 35.85360 | 54.94352 |

FUENTE: Elaboración propia

Cuadro N° A.5.83

COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 10% ,TRAMO 3. 4°

CARRIL
(km 88-103)

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobús | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobús | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobús | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 97.17 | 83.32 | 80.42 | 0.15436 | 0.18002 | 0.18652 | 1.79681 | 1.71345 | 5.92761 | 4.70743 | 3.59632 | 11.57736 | 17.74161 |
| 1996 | 97.13 | 83.29 | 80.39 | 0.15443 | 0.18009 | 0.18660 | 1.79751 | 1.71412 | 5.92995 | 4.70928 | 3.59774 | 11.58192 | 17.74861 |
| 1997 | 97.09 | 83.25 | 80.35 | 0.15449 | 0.18017 | 0.18668 | 1.79829 | 1.71487 | 5.93252 | 4.71133 | 3.59930 | 11.58695 | 17.75632 |
| 1998 | 97.05 | 83.21 | 80.31 | 0.15457 | 0.18026 | 0.18677 | 1.79915 | 1.71569 | 5.93535 | 4.71358 | 3.60102 | 11.59249 | 17.76480 |
| 1999 | 96.99 | 83.17 | 80.27 | 0.15465 | 0.18035 | 0.18687 | 1.80010 | 1.71659 | 5.93847 | 4.71606 | 3.60292 | 11.59858 | 17.77414 |
| 2000 | 96.94 | 83.12 | 80.22 | 0.15474 | 0.18046 | 0.18697 | 1.80114 | 1.71758 | 5.94191 | 4.71879 | 3.60500 | 11.60529 | 17.78442 |
| 2001 | 96.88 | 83.07 | 80.17 | 0.15484 | 0.18057 | 0.18709 | 1.80229 | 1.71868 | 5.94569 | 4.72179 | 3.60730 | 11.61268 | 17.79575 |
| 2002 | 96.81 | 83.01 | 80.12 | 0.15494 | 0.18070 | 0.18722 | 1.80355 | 1.71988 | 5.94986 | 4.72510 | 3.60983 | 11.62083 | 17.80823 |
| 2003 | 96.73 | 82.95 | 80.06 | 0.15506 | 0.18084 | 0.18737 | 1.80494 | 1.72121 | 5.95446 | 4.72875 | 3.61261 | 11.62980 | 17.82197 |
| 2004 | 96.65 | 82.88 | 79.99 | 0.15520 | 0.18099 | 0.18753 | 1.80648 | 1.72267 | 5.95951 | 4.73277 | 3.61568 | 11.63968 | 17.83712 |
| 2005 | 96.56 | 82.80 | 79.91 | 0.15534 | 0.18116 | 0.18770 | 1.80817 | 1.72428 | 5.96509 | 4.73720 | 3.61907 | 11.65057 | 17.85380 |
| 2006 | 96.46 | 82.71 | 79.83 | 0.15550 | 0.18135 | 0.18790 | 1.81003 | 1.72606 | 5.97124 | 4.74208 | 3.62279 | 11.66257 | 17.87220 |
| 2007 | 96.35 | 82.62 | 79.74 | 0.15568 | 0.18155 | 0.18811 | 1.81208 | 1.72802 | 5.97801 | 4.74746 | 3.62690 | 11.67580 | 17.89247 |
| 2008 | 96.23 | 82.52 | 79.64 | 0.15587 | 0.18178 | 0.18835 | 1.81435 | 1.73018 | 5.98548 | 4.75339 | 3.63144 | 11.69039 | 17.91483 |
| 2009 | 96.10 | 82.40 | 79.53 | 0.15609 | 0.18203 | 0.18860 | 1.81685 | 1.73256 | 5.99372 | 4.75993 | 3.63643 | 11.70648 | 17.93948 |
| 2010 | 95.96 | 82.28 | 79.41 | 0.15632 | 0.18231 | 0.18889 | 1.81960 | 1.73519 | 6.00280 | 4.76715 | 3.64195 | 11.72423 | 17.96668 |

FUENTE: Elaboración propia

Cuadro N° A.5.84

COSTO DEL TIEMPO POR VEHICULO, CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 10% ,TRAMO 4. 4°.

CARRIL

(km 103-112)

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobús | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobús | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobús | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 96.88 | 83.07 | 80.17 | 0.09290 | 0.10835 | 0.11226 | 1.08139 | 1.03123 | 3.56748 | 2.83313 | 2.16442 | 6.96774 | 10.67765 |
| 1996 | 96.81 | 83.01 | 80.12 | 0.09297 | 0.10842 | 0.11234 | 1.08215 | 1.03195 | 3.56999 | 2.83512 | 2.16594 | 6.97264 | 10.68516 |
| 1997 | 96.73 | 82.94 | 80.05 | 0.09304 | 0.10851 | 0.11242 | 1.08299 | 1.03275 | 3.57275 | 2.83731 | 2.16762 | 6.97804 | 10.69343 |
| 1998 | 96.65 | 82.87 | 79.99 | 0.09312 | 0.10860 | 0.11252 | 1.08391 | 1.03363 | 3.57580 | 2.83973 | 2.16946 | 6.98398 | 10.70254 |
| 1999 | 96.56 | 82.80 | 79.91 | 0.09321 | 0.10870 | 0.11263 | 1.08493 | 1.03460 | 3.57915 | 2.84240 | 2.17150 | 6.99053 | 10.71258 |
| 2000 | 96.46 | 82.71 | 79.83 | 0.09330 | 0.10881 | 0.11274 | 1.08605 | 1.03567 | 3.58285 | 2.84533 | 2.17374 | 6.99775 | 10.72364 |
| 2001 | 96.35 | 82.62 | 79.74 | 0.09341 | 0.10894 | 0.11287 | 1.08729 | 1.03685 | 3.58693 | 2.84857 | 2.17622 | 7.00571 | 10.73584 |
| 2002 | 96.23 | 82.51 | 79.64 | 0.09353 | 0.10907 | 0.11301 | 1.08865 | 1.03814 | 3.59142 | 2.85214 | 2.17894 | 7.01449 | 10.74929 |
| 2003 | 96.10 | 82.40 | 79.53 | 0.09366 | 0.10922 | 0.11317 | 1.09015 | 1.03958 | 3.59638 | 2.85607 | 2.18195 | 7.02417 | 10.76413 |
| 2004 | 95.95 | 82.28 | 79.41 | 0.09380 | 0.10939 | 0.11334 | 1.09181 | 1.04116 | 3.60184 | 2.86042 | 2.18527 | 7.03485 | 10.78049 |
| 2005 | 95.79 | 82.14 | 79.27 | 0.09396 | 0.10957 | 0.11353 | 1.09364 | 1.04290 | 3.60788 | 2.86521 | 2.18893 | 7.04664 | 10.79855 |
| 2006 | 95.61 | 81.99 | 79.13 | 0.09413 | 0.10977 | 0.11374 | 1.09566 | 1.04483 | 3.61454 | 2.87050 | 2.19297 | 7.05965 | 10.81849 |
| 2007 | 95.42 | 81.82 | 78.97 | 0.09432 | 0.11000 | 0.11397 | 1.09789 | 1.04695 | 3.62189 | 2.87634 | 2.19743 | 7.07401 | 10.84050 |
| 2008 | 95.21 | 81.64 | 78.79 | 0.09453 | 0.11024 | 0.11423 | 1.10035 | 1.04930 | 3.63002 | 2.88279 | 2.20236 | 7.08988 | 10.86482 |
| 2009 | 94.97 | 81.44 | 78.60 | 0.09477 | 0.11052 | 0.11451 | 1.10307 | 1.05190 | 3.63900 | 2.88992 | 2.20781 | 7.10742 | 10.89170 |
| 2010 | 94.71 | 81.21 | 78.38 | 0.09502 | 0.11082 | 0.11482 | 1.10608 | 1.05477 | 3.64893 | 2.89781 | 2.21383 | 7.12682 | 10.92142 |

FUENTE: Elaboración propia

Cuadro N° A.5.85
COSTO DEL TIEMPO POR VEHICULO, CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 10% ,TRAMO 5. 4°
CARRIL
(km 112-115)

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobús | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobús | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobús | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 97.17 | 83.32 | 80.42 | 0.03087 | 0.03600 | 0.03730 | 0.35936 | 0.34269 | 1.18552 | 0.94149 | 0.71926 | 2.31547 | 3.54832 |
| 1996 | 97.13 | 83.29 | 80.39 | 0.03089 | 0.03602 | 0.03732 | 0.35950 | 0.34282 | 1.18599 | 0.94186 | 0.71955 | 2.31638 | 3.54972 |
| 1997 | 97.09 | 83.25 | 80.35 | 0.03090 | 0.03603 | 0.03734 | 0.35966 | 0.34297 | 1.18650 | 0.94227 | 0.71986 | 2.31739 | 3.55126 |
| 1998 | 97.05 | 83.21 | 80.31 | 0.03091 | 0.03605 | 0.03735 | 0.35983 | 0.34314 | 1.18707 | 0.94272 | 0.72020 | 2.31850 | 3.55296 |
| 1999 | 96.99 | 83.17 | 80.27 | 0.03093 | 0.03607 | 0.03737 | 0.36002 | 0.34332 | 1.18769 | 0.94321 | 0.72058 | 2.31972 | 3.55483 |
| 2000 | 96.94 | 83.12 | 80.22 | 0.03095 | 0.03609 | 0.03739 | 0.36023 | 0.34352 | 1.18838 | 0.94376 | 0.72100 | 2.32106 | 3.55688 |
| 2001 | 96.88 | 83.07 | 80.17 | 0.03097 | 0.03611 | 0.03742 | 0.36046 | 0.34374 | 1.18914 | 0.94436 | 0.72146 | 2.32254 | 3.55915 |
| 2002 | 96.81 | 83.01 | 80.12 | 0.03099 | 0.03614 | 0.03744 | 0.36071 | 0.34398 | 1.18997 | 0.94502 | 0.72197 | 2.32417 | 3.56165 |
| 2003 | 96.73 | 82.95 | 80.06 | 0.03101 | 0.03617 | 0.03747 | 0.36099 | 0.34424 | 1.19089 | 0.94575 | 0.72252 | 2.32596 | 3.56439 |
| 2004 | 96.65 | 82.88 | 79.99 | 0.03104 | 0.03620 | 0.03751 | 0.36130 | 0.34453 | 1.19190 | 0.94655 | 0.72314 | 2.32794 | 3.56742 |
| 2005 | 96.56 | 82.80 | 79.91 | 0.03107 | 0.03623 | 0.03754 | 0.36163 | 0.34486 | 1.19302 | 0.94744 | 0.72381 | 2.33011 | 3.57076 |
| 2006 | 96.46 | 82.71 | 79.83 | 0.03110 | 0.03627 | 0.03758 | 0.36201 | 0.34521 | 1.19425 | 0.94842 | 0.72456 | 2.33251 | 3.57444 |
| 2007 | 96.35 | 82.62 | 79.74 | 0.03114 | 0.03631 | 0.03762 | 0.36242 | 0.34560 | 1.19560 | 0.94949 | 0.72538 | 2.33516 | 3.57849 |
| 2008 | 96.23 | 82.52 | 79.64 | 0.03117 | 0.03636 | 0.03767 | 0.36287 | 0.34604 | 1.19710 | 0.95068 | 0.72629 | 2.33808 | 3.58297 |
| 2009 | 96.10 | 82.40 | 79.53 | 0.03122 | 0.03641 | 0.03772 | 0.36337 | 0.34651 | 1.19874 | 0.95199 | 0.72729 | 2.34130 | 3.58790 |
| 2010 | 95.96 | 82.28 | 79.41 | 0.03126 | 0.03646 | 0.03778 | 0.36392 | 0.34704 | 1.20056 | 0.95343 | 0.72839 | 2.34485 | 3.59334 |

FUENTE: Elaboración propia

Cuadro N° A.5.86
PROYECTO AMPLIACIÓN A UN 4° CARRIL VS 3^{er}. CARRIL.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 10%. TRAMO 1

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 2.53790 | 2.51615 | 0.02175 | 2.4202 | 2.3994 | 0.0207 | 6.6490 | 6.5920 | 0.0570 | 5.0796 | 5.0361 | 0.0435 | 8.3725 | 8.3007 | 0.0718 | 16.3524 | 16.2123 | 0.1402 |
| 1996 | 2.54117 | 2.51720 | 0.02397 | 2.4233 | 2.4004 | 0.0229 | 6.6576 | 6.5948 | 0.0628 | 5.0862 | 5.0382 | 0.0480 | 8.3832 | 8.3042 | 0.0791 | 16.3735 | 16.2191 | 0.1544 |
| 1997 | 2.54478 | 2.51836 | 0.02642 | 2.4267 | 2.4015 | 0.0252 | 6.6670 | 6.5978 | 0.0692 | 5.0934 | 5.0405 | 0.0529 | 8.3951 | 8.3080 | 0.0871 | 16.3968 | 16.2266 | 0.1702 |
| 1998 | 2.54876 | 2.51964 | 0.02912 | 2.4305 | 2.4028 | 0.0278 | 6.6775 | 6.6012 | 0.0763 | 5.1014 | 5.0431 | 0.0583 | 8.4083 | 8.3122 | 0.0961 | 16.4224 | 16.2348 | 0.1876 |
| 1999 | 2.55315 | 2.52105 | 0.03210 | 2.4347 | 2.4041 | 0.0306 | 6.6890 | 6.6049 | 0.0841 | 5.1102 | 5.0459 | 0.0643 | 8.4228 | 8.3169 | 0.1059 | 16.4507 | 16.2439 | 0.2068 |
| 2000 | 2.55800 | 2.52260 | 0.03540 | 2.4393 | 2.4056 | 0.0338 | 6.7017 | 6.6089 | 0.0927 | 5.1199 | 5.0490 | 0.0709 | 8.4388 | 8.3220 | 0.1168 | 16.4820 | 16.2539 | 0.2281 |
| 2001 | 2.56336 | 2.52431 | 0.03905 | 2.4444 | 2.4072 | 0.0372 | 6.7157 | 6.6134 | 0.1023 | 5.1306 | 5.0524 | 0.0782 | 8.4564 | 8.3276 | 0.1288 | 16.5165 | 16.2649 | 0.2516 |
| 2002 | 2.56927 | 2.52619 | 0.04309 | 2.4501 | 2.4090 | 0.0411 | 6.7312 | 6.6183 | 0.1129 | 5.1424 | 5.0562 | 0.0862 | 8.4760 | 8.3338 | 0.1421 | 16.5546 | 16.2770 | 0.2776 |
| 2003 | 2.57581 | 2.52826 | 0.04755 | 2.4563 | 2.4110 | 0.0453 | 6.7483 | 6.6238 | 0.1246 | 5.1555 | 5.0603 | 0.0952 | 8.4975 | 8.3407 | 0.1569 | 16.5967 | 16.2903 | 0.3064 |
| 2004 | 2.58305 | 2.53054 | 0.05250 | 2.4632 | 2.4131 | 0.0501 | 6.7673 | 6.6297 | 0.1376 | 5.1700 | 5.0649 | 0.1051 | 8.5214 | 8.3482 | 0.1732 | 16.6434 | 16.3050 | 0.3383 |
| 2005 | 2.59105 | 2.53306 | 0.05799 | 2.4708 | 2.4155 | 0.0553 | 6.7883 | 6.6363 | 0.1519 | 5.1860 | 5.0699 | 0.1161 | 8.5478 | 8.3565 | 0.1913 | 16.6949 | 16.3213 | 0.3737 |
| 2006 | 2.59991 | 2.53583 | 0.06408 | 2.4793 | 2.4182 | 0.0611 | 6.8115 | 6.6436 | 0.1679 | 5.2038 | 5.0755 | 0.1283 | 8.5770 | 8.3656 | 0.2114 | 16.7520 | 16.3391 | 0.4129 |
| 2007 | 2.60973 | 2.53889 | 0.07084 | 2.4887 | 2.4211 | 0.0676 | 6.8372 | 6.6516 | 0.1856 | 5.2234 | 5.0816 | 0.1418 | 8.6094 | 8.3757 | 0.2337 | 16.8153 | 16.3588 | 0.4564 |
| 2008 | 2.62062 | 2.54227 | 0.07835 | 2.4990 | 2.4243 | 0.0747 | 6.8657 | 6.6604 | 0.2053 | 5.2452 | 5.0884 | 0.1568 | 8.6453 | 8.3869 | 0.2585 | 16.8854 | 16.3806 | 0.5048 |
| 2009 | 2.63270 | 2.54599 | 0.08671 | 2.5106 | 2.4279 | 0.0827 | 6.8974 | 6.6702 | 0.2272 | 5.2694 | 5.0958 | 0.1736 | 8.6852 | 8.3991 | 0.2861 | 16.9633 | 16.4046 | 0.5587 |
| 2010 | 2.64611 | 2.55009 | 0.09602 | 2.5234 | 2.4318 | 0.0916 | 6.9325 | 6.6810 | 0.2516 | 5.2962 | 5.1040 | 0.1922 | 8.7294 | 8.4127 | 0.3168 | 17.0497 | 16.4310 | 0.6187 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.81 y A. 5.36

Cuadro N° A.5.87
PROYECTO AMPLIACIÓN A UN 4° CARRIL VS 3^{er} CARRIL.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 10%. TRAMO 2

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 5.5432 | 5.5065 | 0.0366 | 5.2860 | 5.2511 | 0.0349 | 14.5224 | 14.4265 | 0.0959 | 11.0947 | 11.0214 | 0.0733 | 18.2867 | 18.1659 | 0.1208 | 35.7162 | 35.4803 | 0.2359 |
| 1996 | 5.5487 | 5.5084 | 0.0403 | 5.2913 | 5.2528 | 0.0385 | 14.5369 | 14.4313 | 0.1056 | 11.1057 | 11.0250 | 0.0807 | 18.3049 | 18.1719 | 0.1330 | 35.7518 | 35.4920 | 0.2598 |
| 1997 | 5.5548 | 5.5103 | 0.0444 | 5.2971 | 5.2547 | 0.0424 | 14.5528 | 14.4365 | 0.1164 | 11.1179 | 11.0290 | 0.0889 | 18.3250 | 18.1784 | 0.1465 | 35.7910 | 35.5048 | 0.2862 |
| 1998 | 5.5615 | 5.5125 | 0.0489 | 5.3035 | 5.2568 | 0.0467 | 14.5704 | 14.4422 | 0.1282 | 11.1313 | 11.0334 | 0.0980 | 18.3471 | 18.1857 | 0.1615 | 35.8342 | 35.5189 | 0.3153 |
| 1999 | 5.5689 | 5.5149 | 0.0539 | 5.3105 | 5.2591 | 0.0514 | 14.5898 | 14.4485 | 0.1413 | 11.1461 | 11.0382 | 0.1079 | 18.3715 | 18.1936 | 0.1779 | 35.8819 | 35.5344 | 0.3475 |
| 2000 | 5.5770 | 5.5176 | 0.0594 | 5.3183 | 5.2616 | 0.0567 | 14.6112 | 14.4555 | 0.1557 | 11.1625 | 11.0435 | 0.1190 | 18.3984 | 18.2023 | 0.1961 | 35.9345 | 35.5515 | 0.3830 |
| 2001 | 5.5860 | 5.5205 | 0.0655 | 5.3269 | 5.2644 | 0.0625 | 14.6348 | 14.4631 | 0.1717 | 11.1805 | 11.0493 | 0.1311 | 18.4281 | 18.2120 | 0.2162 | 35.9925 | 35.5703 | 0.4222 |
| 2002 | 5.5960 | 5.5237 | 0.0722 | 5.3364 | 5.2675 | 0.0689 | 14.6608 | 14.4715 | 0.1893 | 11.2004 | 11.0558 | 0.1446 | 18.4609 | 18.2226 | 0.2383 | 36.0565 | 35.5910 | 0.4655 |
| 2003 | 5.6069 | 5.5273 | 0.0797 | 5.3468 | 5.2708 | 0.0760 | 14.6895 | 14.4808 | 0.2087 | 11.2223 | 11.0629 | 0.1595 | 18.4971 | 18.2343 | 0.2629 | 36.1272 | 35.6138 | 0.5134 |
| 2004 | 5.6191 | 5.5312 | 0.0879 | 5.3584 | 5.2746 | 0.0838 | 14.7213 | 14.4910 | 0.2303 | 11.2466 | 11.0707 | 0.1759 | 18.5371 | 18.2471 | 0.2900 | 36.2053 | 35.6389 | 0.5664 |
| 2005 | 5.6324 | 5.5355 | 0.0970 | 5.3712 | 5.2787 | 0.0925 | 14.7564 | 14.5023 | 0.2541 | 11.2734 | 11.0793 | 0.1941 | 18.5813 | 18.2613 | 0.3200 | 36.2916 | 35.6666 | 0.6250 |
| 2006 | 5.6473 | 5.5402 | 0.1071 | 5.3853 | 5.2832 | 0.1021 | 14.7952 | 14.5147 | 0.2805 | 11.3030 | 11.0887 | 0.2143 | 18.6301 | 18.2769 | 0.3532 | 36.3869 | 35.6971 | 0.6898 |
| 2007 | 5.6636 | 5.5454 | 0.1182 | 5.4009 | 5.2881 | 0.1127 | 14.8381 | 14.5283 | 0.3097 | 11.3358 | 11.0992 | 0.2366 | 18.6841 | 18.2941 | 0.3900 | 36.4925 | 35.7307 | 0.7618 |
| 2008 | 5.6818 | 5.5512 | 0.1306 | 5.4182 | 5.2936 | 0.1245 | 14.8855 | 14.5434 | 0.3422 | 11.3721 | 11.1107 | 0.2614 | 18.7439 | 18.3131 | 0.4308 | 36.6092 | 35.7677 | 0.8415 |
| 2009 | 5.7018 | 5.5575 | 0.1443 | 5.4373 | 5.2997 | 0.1376 | 14.9381 | 14.5600 | 0.3781 | 11.4122 | 11.1234 | 0.2889 | 18.8101 | 18.3340 | 0.4761 | 36.7385 | 35.8086 | 0.9300 |
| 2010 | 5.7241 | 5.5645 | 0.1596 | 5.4585 | 5.3063 | 0.1522 | 14.9964 | 14.5783 | 0.4181 | 11.4568 | 11.1374 | 0.3194 | 18.8835 | 18.3570 | 0.5265 | 36.8818 | 35.8536 | 1.0282 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.82 y A. 5.37

Cuadro N° A.5.88
PROYECTO AMPLIACIÓN A UN 4° CARRIL VS 3^{er}. CARRIL.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 10%. TRAMO 3

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.81060 | 1.79681 | 0.01379 | 1.72660 | 1.71345 | 0.01315 | 4.74356 | 4.70743 | 0.03613 | 3.62393 | 3.59632 | 0.02760 | 5.97310 | 5.92761 | 0.04549 | 11.6662 | 11.5774 | 0.0889 |
| 1996 | 1.81271 | 1.79751 | 0.01519 | 1.72861 | 1.71412 | 0.01449 | 4.74909 | 4.70928 | 0.03980 | 3.62815 | 3.59774 | 0.03041 | 5.98007 | 5.92995 | 0.05012 | 11.6798 | 11.5819 | 0.0979 |
| 1997 | 1.81504 | 1.79829 | 0.01674 | 1.73083 | 1.71487 | 0.01596 | 4.75519 | 4.71133 | 0.04386 | 3.63281 | 3.59930 | 0.03351 | 5.98775 | 5.93252 | 0.05523 | 11.6948 | 11.5870 | 0.1079 |
| 1998 | 1.81760 | 1.79915 | 0.01845 | 1.73328 | 1.71569 | 0.01759 | 4.76192 | 4.71358 | 0.04834 | 3.63795 | 3.60102 | 0.03693 | 5.99622 | 5.93535 | 0.06087 | 11.7114 | 11.5925 | 0.1189 |
| 1999 | 1.82044 | 1.80010 | 0.02034 | 1.73598 | 1.71659 | 0.01939 | 4.76934 | 4.71606 | 0.05328 | 3.64362 | 3.60292 | 0.04071 | 6.00557 | 5.93847 | 0.06709 | 11.7296 | 11.5986 | 0.1310 |
| 2000 | 1.82356 | 1.80114 | 0.02242 | 1.73897 | 1.71758 | 0.02138 | 4.77753 | 4.71879 | 0.05874 | 3.64988 | 3.60500 | 0.04488 | 6.01588 | 5.94191 | 0.07397 | 11.7498 | 11.6053 | 0.1445 |
| 2001 | 1.82702 | 1.80229 | 0.02473 | 1.74226 | 1.71868 | 0.02358 | 4.78657 | 4.72179 | 0.06478 | 3.65679 | 3.60730 | 0.04949 | 6.02727 | 5.94569 | 0.08157 | 11.7720 | 11.6127 | 0.1593 |
| 2002 | 1.83083 | 1.80355 | 0.02728 | 1.74589 | 1.71988 | 0.02601 | 4.79656 | 4.72510 | 0.07146 | 3.66442 | 3.60983 | 0.05459 | 6.03984 | 5.94986 | 0.08998 | 11.7966 | 11.6208 | 0.1757 |
| 2003 | 1.83504 | 1.80494 | 0.03010 | 1.74991 | 1.72121 | 0.02870 | 4.80760 | 4.72875 | 0.07885 | 3.67285 | 3.61261 | 0.06024 | 6.05374 | 5.95446 | 0.09928 | 11.8237 | 11.6298 | 0.1939 |
| 2004 | 1.83970 | 1.80648 | 0.03322 | 1.75435 | 1.72267 | 0.03168 | 4.81979 | 4.73277 | 0.08703 | 3.68217 | 3.61568 | 0.06648 | 6.06910 | 5.95951 | 0.10958 | 11.8537 | 11.6397 | 0.2140 |
| 2005 | 1.84484 | 1.80817 | 0.03668 | 1.75926 | 1.72428 | 0.03497 | 4.83328 | 4.73720 | 0.09609 | 3.69247 | 3.61907 | 0.07341 | 6.08608 | 5.96509 | 0.12099 | 11.8869 | 11.6506 | 0.2363 |
| 2006 | 1.85054 | 1.81003 | 0.04051 | 1.76469 | 1.72606 | 0.03863 | 4.84821 | 4.74208 | 0.10613 | 3.70387 | 3.62279 | 0.08108 | 6.10487 | 5.97124 | 0.13364 | 11.9236 | 11.6626 | 0.2610 |
| 2007 | 1.85685 | 1.81208 | 0.04476 | 1.77070 | 1.72802 | 0.04269 | 4.86473 | 4.74746 | 0.11727 | 3.71650 | 3.62690 | 0.08959 | 6.12568 | 5.97801 | 0.14767 | 11.9642 | 11.6758 | 0.2884 |
| 2008 | 1.86383 | 1.81435 | 0.04949 | 1.77737 | 1.73018 | 0.04719 | 4.88304 | 4.75339 | 0.12965 | 3.73048 | 3.63144 | 0.09905 | 6.14873 | 5.98548 | 0.16325 | 12.0092 | 11.6904 | 0.3189 |
| 2009 | 1.87158 | 1.81685 | 0.05474 | 1.78476 | 1.73256 | 0.05220 | 4.90333 | 4.75993 | 0.14340 | 3.74599 | 3.63643 | 0.10956 | 6.17429 | 5.99372 | 0.18057 | 12.0592 | 11.7065 | 0.3527 |
| 2010 | 1.88018 | 1.81960 | 0.06058 | 1.79295 | 1.73519 | 0.05777 | 4.92586 | 4.76715 | 0.15871 | 3.76320 | 3.64195 | 0.12125 | 6.20265 | 6.00280 | 0.19985 | 12.1146 | 11.7242 | 0.3903 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.83 y A. 5.38

Cuadro N° A.5.89
PROYECTO AMPLIACIÓN A UN 4° CARRIL VS 3° CARRIL.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 10%. TRAMO 4

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.09399 | 1.08139 | 0.01259 | 1.04323 | 1.03123 | 0.01201 | 2.86612 | 2.83313 | 0.03299 | 2.18963 | 2.16442 | 0.02521 | 3.60903 | 3.56748 | 0.04154 | 7.0489 | 6.9677 | 0.0811 |
| 1996 | 1.09604 | 1.08215 | 0.01389 | 1.04519 | 1.03195 | 0.01324 | 2.87151 | 2.83512 | 0.03639 | 2.19374 | 2.16594 | 0.02780 | 3.61581 | 3.56999 | 0.04582 | 7.0621 | 6.9726 | 0.0895 |
| 1997 | 1.09831 | 1.08299 | 0.01532 | 1.04736 | 1.03275 | 0.01461 | 2.87745 | 2.83731 | 0.04014 | 2.19828 | 2.16762 | 0.03066 | 3.62330 | 3.57275 | 0.05054 | 7.0768 | 6.9780 | 0.0987 |
| 1998 | 1.10082 | 1.08391 | 0.01691 | 1.04975 | 1.03363 | 0.01612 | 2.88402 | 2.83973 | 0.04429 | 2.20330 | 2.16946 | 0.03384 | 3.63157 | 3.57580 | 0.05577 | 7.0929 | 6.9840 | 0.1089 |
| 1999 | 1.10359 | 1.08493 | 0.01866 | 1.05239 | 1.03460 | 0.01779 | 2.89128 | 2.84240 | 0.04889 | 2.20885 | 2.17150 | 0.03735 | 3.64071 | 3.57915 | 0.06156 | 7.1108 | 6.9905 | 0.1202 |
| 2000 | 1.10666 | 1.08605 | 0.02060 | 1.05532 | 1.03567 | 0.01965 | 2.89931 | 2.84533 | 0.05398 | 2.21498 | 2.17374 | 0.04124 | 3.65082 | 3.58285 | 0.06797 | 7.1305 | 6.9978 | 0.1328 |
| 2001 | 1.11005 | 1.08729 | 0.02276 | 1.05855 | 1.03685 | 0.02170 | 2.90820 | 2.84857 | 0.05963 | 2.22177 | 2.17622 | 0.04556 | 3.66201 | 3.58693 | 0.07509 | 7.1524 | 7.0057 | 0.1467 |
| 2002 | 1.11380 | 1.08865 | 0.02515 | 1.06213 | 1.03814 | 0.02399 | 2.91803 | 2.85214 | 0.06590 | 2.22929 | 2.17894 | 0.05034 | 3.67440 | 3.59142 | 0.08298 | 7.1766 | 7.0145 | 0.1621 |
| 2003 | 1.11796 | 1.09015 | 0.02781 | 1.06610 | 1.03958 | 0.02652 | 2.92893 | 2.85607 | 0.07286 | 2.23761 | 2.18195 | 0.05566 | 3.68812 | 3.59638 | 0.09174 | 7.2034 | 7.0242 | 0.1792 |
| 2004 | 1.12257 | 1.09181 | 0.03076 | 1.07049 | 1.04116 | 0.02934 | 2.94101 | 2.86042 | 0.08060 | 2.24684 | 2.18527 | 0.06157 | 3.70333 | 3.60184 | 0.10149 | 7.2331 | 7.0349 | 0.1982 |
| 2005 | 1.12769 | 1.09364 | 0.03405 | 1.07537 | 1.04290 | 0.03247 | 2.95442 | 2.86521 | 0.08921 | 2.25708 | 2.18893 | 0.06815 | 3.72021 | 3.60788 | 0.11233 | 7.2660 | 7.0466 | 0.2194 |
| 2006 | 1.13337 | 1.09566 | 0.03771 | 1.08079 | 1.04483 | 0.03596 | 2.96931 | 2.87050 | 0.09881 | 2.26845 | 2.19297 | 0.07549 | 3.73896 | 3.61454 | 0.12442 | 7.3027 | 7.0596 | 0.2430 |
| 2007 | 1.13969 | 1.09789 | 0.04180 | 1.08682 | 1.04695 | 0.03986 | 2.98586 | 2.87634 | 0.10952 | 2.28110 | 2.19743 | 0.08367 | 3.75980 | 3.62189 | 0.13790 | 7.3434 | 7.0740 | 0.2693 |
| 2008 | 1.14672 | 1.10035 | 0.04637 | 1.09352 | 1.04930 | 0.04422 | 3.00427 | 2.88279 | 0.12148 | 2.29517 | 2.20236 | 0.09281 | 3.78299 | 3.63002 | 0.15297 | 7.3887 | 7.0899 | 0.2988 |
| 2009 | 1.15455 | 1.10307 | 0.05148 | 1.10099 | 1.05190 | 0.04909 | 3.02480 | 2.88992 | 0.13488 | 2.31085 | 2.20781 | 0.10304 | 3.80884 | 3.63900 | 0.16984 | 7.4391 | 7.1074 | 0.3317 |
| 2010 | 1.16330 | 1.10608 | 0.05721 | 1.10933 | 1.05477 | 0.05456 | 3.04771 | 2.89781 | 0.14990 | 2.32835 | 2.21383 | 0.11452 | 3.83768 | 3.64893 | 0.18875 | 7.4955 | 7.1268 | 0.3687 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.84 y A. 5.39

Cuadro N° A.5.90
PROYECTO AMPLIACIÓN A UN 4° CARRIL VS 3^{er}. CARRIL.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 10%. TRAMO 5

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 0.36199 | 0.35936 | 0.00263 | 0.34520 | 0.34269 | 0.00251 | 0.94837 | 0.94149 | 0.00689 | 0.72453 | 0.71926 | 0.00526 | 1.19419 | 1.18552 | 0.00867 | 2.3324 | 2.3155 | 0.0169 |
| 1996 | 0.36240 | 0.35950 | 0.00290 | 0.34559 | 0.34282 | 0.00276 | 0.94944 | 0.94186 | 0.00759 | 0.72535 | 0.71955 | 0.00580 | 1.19554 | 1.18599 | 0.00955 | 2.3350 | 2.3164 | 0.0187 |
| 1997 | 0.36285 | 0.35966 | 0.00319 | 0.34602 | 0.34297 | 0.00304 | 0.95063 | 0.94227 | 0.00836 | 0.72625 | 0.71986 | 0.00639 | 1.19703 | 1.18650 | 0.01053 | 2.3380 | 2.3174 | 0.0206 |
| 1998 | 0.36335 | 0.35983 | 0.00352 | 0.34649 | 0.34314 | 0.00335 | 0.95193 | 0.94272 | 0.00921 | 0.72724 | 0.72020 | 0.00704 | 1.19867 | 1.18707 | 0.01160 | 2.3412 | 2.3185 | 0.0227 |
| 1999 | 0.36390 | 0.36002 | 0.00388 | 0.34701 | 0.34332 | 0.00370 | 0.95337 | 0.94321 | 0.01016 | 0.72834 | 0.72058 | 0.00776 | 1.20048 | 1.18769 | 0.01279 | 2.3447 | 2.3197 | 0.0250 |
| 2000 | 0.36450 | 0.36023 | 0.00427 | 0.34759 | 0.34352 | 0.00408 | 0.95495 | 0.94376 | 0.01120 | 0.72955 | 0.72100 | 0.00855 | 1.20248 | 1.18838 | 0.01410 | 2.3486 | 2.3211 | 0.0275 |
| 2001 | 0.36517 | 0.36046 | 0.00471 | 0.34823 | 0.34374 | 0.00449 | 0.95671 | 0.94436 | 0.01235 | 0.73089 | 0.72146 | 0.00943 | 1.20469 | 1.18914 | 0.01555 | 2.3529 | 2.3225 | 0.0304 |
| 2002 | 0.36591 | 0.36071 | 0.00520 | 0.34893 | 0.34398 | 0.00496 | 0.95864 | 0.94502 | 0.01362 | 0.73237 | 0.72197 | 0.01040 | 1.20712 | 1.18997 | 0.01715 | 2.3577 | 2.3242 | 0.0335 |
| 2003 | 0.36672 | 0.36099 | 0.00574 | 0.34971 | 0.34424 | 0.00547 | 0.96078 | 0.94575 | 0.01503 | 0.73400 | 0.72252 | 0.01148 | 1.20981 | 1.19089 | 0.01892 | 2.3629 | 2.3260 | 0.0370 |
| 2004 | 0.36762 | 0.36130 | 0.00633 | 0.35057 | 0.34453 | 0.00604 | 0.96314 | 0.94655 | 0.01658 | 0.73580 | 0.72314 | 0.01267 | 1.21278 | 1.19190 | 0.02088 | 2.3687 | 2.3279 | 0.0408 |
| 2005 | 0.36862 | 0.36163 | 0.00699 | 0.35152 | 0.34486 | 0.00666 | 0.96575 | 0.94744 | 0.01831 | 0.73780 | 0.72381 | 0.01399 | 1.21607 | 1.19302 | 0.02305 | 2.3751 | 2.3301 | 0.0450 |
| 2006 | 0.36972 | 0.36201 | 0.00772 | 0.35257 | 0.34521 | 0.00736 | 0.96863 | 0.94842 | 0.02022 | 0.74001 | 0.72456 | 0.01545 | 1.21971 | 1.19425 | 0.02546 | 2.3822 | 2.3325 | 0.0497 |
| 2007 | 0.37094 | 0.36242 | 0.00853 | 0.35373 | 0.34560 | 0.00813 | 0.97183 | 0.94949 | 0.02234 | 0.74245 | 0.72538 | 0.01707 | 1.22373 | 1.19560 | 0.02813 | 2.3901 | 2.3352 | 0.0549 |
| 2008 | 0.37230 | 0.36287 | 0.00943 | 0.35502 | 0.34604 | 0.00899 | 0.97537 | 0.95068 | 0.02469 | 0.74515 | 0.72629 | 0.01887 | 1.22819 | 1.19710 | 0.03109 | 2.3988 | 2.3381 | 0.0607 |
| 2009 | 0.37379 | 0.36337 | 0.01042 | 0.35645 | 0.34651 | 0.00994 | 0.97930 | 0.95199 | 0.02731 | 0.74815 | 0.72729 | 0.02086 | 1.23313 | 1.19874 | 0.03439 | 2.4085 | 2.3413 | 0.0672 |
| 2010 | 0.37545 | 0.36392 | 0.01153 | 0.35804 | 0.34704 | 0.01100 | 0.98365 | 0.95343 | 0.03022 | 0.75148 | 0.72839 | 0.02309 | 1.23861 | 1.20056 | 0.03805 | 2.4192 | 2.3448 | 0.0743 |

FUENTE: Elaboración propia a partir de los cuadros No. A.5.85 y A. 5.40

Cuadro N° A.5.91

**COSTO DEL TIEMPO POR VEHICULO CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 15% ,TRAMO 1. 4°
CARRIL
(km 21-42)**

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobus | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobus | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobus | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 97.15 | 83.30 | 80.40 | 0.21616 | 0.25209 | 0.26120 | 2.51615 | 2.39942 | 8.30069 | 6.59202 | 5.03609 | 16.21229 | 24.84437 |
| 1996 | 97.09 | 83.25 | 80.35 | 0.21630 | 0.25225 | 0.26136 | 2.51773 | 2.40093 | 8.30591 | 6.59616 | 5.03926 | 16.22248 | 24.85999 |
| 1997 | 97.02 | 83.19 | 80.29 | 0.21646 | 0.25244 | 0.26155 | 2.51955 | 2.40266 | 8.31192 | 6.60094 | 5.04291 | 16.23422 | 24.87798 |
| 1998 | 96.94 | 83.12 | 80.22 | 0.21664 | 0.25265 | 0.26177 | 2.52165 | 2.40467 | 8.31884 | 6.60644 | 5.04711 | 16.24774 | 24.89870 |
| 1999 | 96.84 | 83.04 | 80.15 | 0.21684 | 0.25289 | 0.26202 | 2.52407 | 2.40697 | 8.32682 | 6.61277 | 5.05194 | 16.26332 | 24.92257 |
| 2000 | 96.74 | 82.95 | 80.06 | 0.21708 | 0.25317 | 0.26231 | 2.52685 | 2.40963 | 8.33601 | 6.62007 | 5.05752 | 16.28127 | 24.95008 |
| 2001 | 96.61 | 82.84 | 79.96 | 0.21736 | 0.25349 | 0.26264 | 2.53006 | 2.41269 | 8.34661 | 6.62848 | 5.06395 | 16.30196 | 24.98179 |
| 2002 | 96.47 | 82.72 | 79.84 | 0.21768 | 0.25386 | 0.26303 | 2.53377 | 2.41622 | 8.35882 | 6.63819 | 5.07136 | 16.32583 | 25.01836 |
| 2003 | 96.31 | 82.58 | 79.71 | 0.21804 | 0.25429 | 0.26347 | 2.53804 | 2.42030 | 8.37292 | 6.64938 | 5.07991 | 16.35336 | 25.06055 |
| 2004 | 96.12 | 82.42 | 79.55 | 0.21847 | 0.25478 | 0.26398 | 2.54297 | 2.42500 | 8.38919 | 6.66230 | 5.08978 | 16.38513 | 25.10924 |
| 2005 | 95.91 | 82.24 | 79.37 | 0.21896 | 0.25535 | 0.26457 | 2.54867 | 2.43043 | 8.40797 | 6.67722 | 5.10118 | 16.42182 | 25.16546 |
| 2006 | 95.66 | 82.03 | 79.17 | 0.21952 | 0.25601 | 0.26526 | 2.55525 | 2.43670 | 8.42968 | 6.69446 | 5.11435 | 16.46422 | 25.23044 |
| 2007 | 95.38 | 81.78 | 78.93 | 0.22018 | 0.25677 | 0.26605 | 2.56286 | 2.44396 | 8.45478 | 6.71439 | 5.12958 | 16.51325 | 25.30557 |
| 2008 | 95.05 | 81.50 | 78.66 | 0.22093 | 0.25766 | 0.26696 | 2.57166 | 2.45236 | 8.48384 | 6.73747 | 5.14721 | 16.56999 | 25.39253 |
| 2009 | 94.68 | 81.18 | 78.35 | 0.22181 | 0.25868 | 0.26802 | 2.58187 | 2.46209 | 8.51750 | 6.76420 | 5.16763 | 16.63574 | 25.49328 |
| 2010 | 94.24 | 80.81 | 77.99 | 0.22283 | 0.25986 | 0.26925 | 2.59370 | 2.47337 | 8.55654 | 6.79520 | 5.19132 | 16.71199 | 25.61013 |

FUENTE: Elaboración propia

Cuadro N° A.5.92
COSTO DEL TIEMPO POR VEHICULO, CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 15% ,TRAMO 2. 4°
CARRIL
(km 42-88)

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobuses | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobus | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobus | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 97.24 | 83.38 | 80.47 | 0.47307 | 0.55171 | 0.57163 | 5.50655 | 5.25109 | 18.16593 | 14.42654 | 11.02141 | 35.48034 | 54.37152 |
| 1996 | 97.19 | 83.34 | 80.43 | 0.47330 | 0.55198 | 0.57191 | 5.50926 | 5.25367 | 18.17487 | 14.43363 | 11.02683 | 35.49779 | 54.39826 |
| 1997 | 97.13 | 83.29 | 80.39 | 0.47357 | 0.55229 | 0.57223 | 5.51237 | 5.25665 | 18.18515 | 14.44180 | 11.03307 | 35.51787 | 54.42904 |
| 1998 | 97.07 | 83.24 | 80.33 | 0.47388 | 0.55265 | 0.57261 | 5.51596 | 5.26007 | 18.19699 | 14.45120 | 11.04025 | 35.54100 | 54.46448 |
| 1999 | 97.00 | 83.17 | 80.27 | 0.47424 | 0.55306 | 0.57303 | 5.52010 | 5.26401 | 18.21063 | 14.46203 | 11.04853 | 35.56763 | 54.50529 |
| 2000 | 96.91 | 83.10 | 80.21 | 0.47464 | 0.55354 | 0.57353 | 5.52486 | 5.26855 | 18.22633 | 14.47450 | 11.05806 | 35.59831 | 54.55230 |
| 2001 | 96.82 | 83.02 | 80.13 | 0.47512 | 0.55409 | 0.57410 | 5.53034 | 5.27378 | 18.24443 | 14.48887 | 11.06904 | 35.63365 | 54.60646 |
| 2002 | 96.71 | 82.92 | 80.03 | 0.47566 | 0.55472 | 0.57475 | 5.53666 | 5.27981 | 18.26529 | 14.50543 | 11.08169 | 35.67439 | 54.66888 |
| 2003 | 96.58 | 82.82 | 79.93 | 0.47628 | 0.55545 | 0.57551 | 5.54395 | 5.28676 | 18.28933 | 14.52453 | 11.09627 | 35.72134 | 54.74084 |
| 2004 | 96.43 | 82.69 | 79.81 | 0.47701 | 0.55629 | 0.57638 | 5.55236 | 5.29477 | 18.31705 | 14.54655 | 11.11310 | 35.77550 | 54.82383 |
| 2005 | 96.27 | 82.55 | 79.67 | 0.47784 | 0.55727 | 0.57739 | 5.56205 | 5.30402 | 18.34904 | 14.57195 | 11.13250 | 35.83798 | 54.91958 |
| 2006 | 96.07 | 82.38 | 79.51 | 0.47880 | 0.55839 | 0.57855 | 5.57325 | 5.31469 | 18.38597 | 14.60128 | 11.15491 | 35.91010 | 55.03010 |
| 2007 | 95.85 | 82.19 | 79.32 | 0.47991 | 0.55968 | 0.57989 | 5.58618 | 5.32702 | 18.42862 | 14.63515 | 11.18078 | 35.99340 | 55.15775 |
| 2008 | 95.60 | 81.97 | 79.11 | 0.48120 | 0.56118 | 0.58144 | 5.60112 | 5.34127 | 18.47791 | 14.67429 | 11.21069 | 36.08967 | 55.30529 |
| 2009 | 95.30 | 81.72 | 78.87 | 0.48268 | 0.56291 | 0.58324 | 5.61840 | 5.35775 | 18.53493 | 14.71957 | 11.24528 | 36.20103 | 55.47593 |
| 2010 | 94.96 | 81.43 | 78.59 | 0.48440 | 0.56492 | 0.58532 | 5.63841 | 5.37683 | 18.60093 | 14.77199 | 11.28533 | 36.32994 | 55.67348 |

FUENTE: Elaboración propia

Cuadro N° A.5.93

COSTO DEL TIEMPO POR VEHICULO, CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 15% ,TRAMO 3. 4°

CARRIL
(km 88-103)

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobus | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobus | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobus | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 97.17 | 83.32 | 80.42 | 0.15436 | 0.18002 | 0.18652 | 1.79681 | 1.71345 | 5.92761 | 4.70743 | 3.59632 | 11.57736 | 17.74161 |
| 1996 | 97.11 | 83.27 | 80.37 | 0.15446 | 0.18013 | 0.18663 | 1.79787 | 1.71446 | 5.93111 | 4.71021 | 3.59845 | 11.58421 | 17.75211 |
| 1997 | 97.05 | 83.22 | 80.32 | 0.15456 | 0.18025 | 0.18676 | 1.79909 | 1.71563 | 5.93515 | 4.71342 | 3.60090 | 11.59210 | 17.76420 |
| 1998 | 96.97 | 83.15 | 80.25 | 0.15468 | 0.18039 | 0.18691 | 1.80050 | 1.71698 | 5.93981 | 4.71712 | 3.60373 | 11.60118 | 17.77813 |
| 1999 | 96.89 | 83.08 | 80.18 | 0.15482 | 0.18056 | 0.18708 | 1.80213 | 1.71852 | 5.94516 | 4.72137 | 3.60698 | 11.61165 | 17.79416 |
| 2000 | 96.78 | 82.99 | 80.10 | 0.15498 | 0.18074 | 0.18727 | 1.80400 | 1.72031 | 5.95134 | 4.72627 | 3.61072 | 11.62371 | 17.81264 |
| 2001 | 96.67 | 82.89 | 80.00 | 0.15517 | 0.18096 | 0.18749 | 1.80616 | 1.72237 | 5.95845 | 4.73193 | 3.61504 | 11.63761 | 17.83394 |
| 2002 | 96.54 | 82.78 | 79.89 | 0.15538 | 0.18121 | 0.18775 | 1.80864 | 1.72474 | 5.96666 | 4.73844 | 3.62002 | 11.65363 | 17.85850 |
| 2003 | 96.38 | 82.65 | 79.77 | 0.15563 | 0.18150 | 0.18805 | 1.81151 | 1.72747 | 5.97612 | 4.74596 | 3.62576 | 11.67211 | 17.88682 |
| 2004 | 96.21 | 82.50 | 79.62 | 0.15591 | 0.18183 | 0.18839 | 1.81482 | 1.73063 | 5.98704 | 4.75463 | 3.63238 | 11.69344 | 17.91951 |
| 2005 | 96.01 | 82.32 | 79.45 | 0.15624 | 0.18221 | 0.18879 | 1.81864 | 1.73427 | 5.99965 | 4.76464 | 3.64003 | 11.71807 | 17.95724 |
| 2006 | 95.77 | 82.12 | 79.26 | 0.15662 | 0.18265 | 0.18925 | 1.82306 | 1.73848 | 6.01421 | 4.77621 | 3.64887 | 11.74651 | 18.00083 |
| 2007 | 95.51 | 81.89 | 79.04 | 0.15706 | 0.18316 | 0.18978 | 1.82816 | 1.74335 | 6.03105 | 4.78958 | 3.65908 | 11.77940 | 18.05123 |
| 2008 | 95.20 | 81.63 | 78.78 | 0.15757 | 0.18376 | 0.19039 | 1.83407 | 1.74898 | 6.05053 | 4.80505 | 3.67090 | 11.81744 | 18.10953 |
| 2009 | 94.84 | 81.33 | 78.49 | 0.15815 | 0.18444 | 0.19110 | 1.84090 | 1.75550 | 6.07309 | 4.82296 | 3.68459 | 11.86150 | 18.17704 |
| 2010 | 94.44 | 80.98 | 78.16 | 0.15883 | 0.18524 | 0.19192 | 1.84883 | 1.76306 | 6.09924 | 4.84373 | 3.70045 | 11.91257 | 18.25531 |

FUENTE: Elaboración propia

Cuadro N° A.5.94
COSTO DEL TIEMPO POR VEHICULO, CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 15% ,TRAMO 4. 4°
CARRIL
(km 103-112)

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobuses | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobus | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobus | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 96.88 | 83.07 | 80.17 | 0.09290 | 0.10835 | 0.11226 | 1.08139 | 1.03123 | 3.56748 | 2.83313 | 2.16442 | 6.96774 | 10.67765 |
| 1996 | 96.77 | 82.98 | 80.09 | 0.09300 | 0.10846 | 0.11238 | 1.08253 | 1.03231 | 3.57125 | 2.83612 | 2.16670 | 6.97509 | 10.68892 |
| 1997 | 96.66 | 82.88 | 79.99 | 0.09311 | 0.10859 | 0.11251 | 1.08385 | 1.03357 | 3.57558 | 2.83956 | 2.16933 | 6.98356 | 10.70190 |
| 1998 | 96.52 | 82.76 | 79.88 | 0.09324 | 0.10874 | 0.11267 | 1.08537 | 1.03501 | 3.58059 | 2.84353 | 2.17237 | 6.99333 | 10.71687 |
| 1999 | 96.37 | 82.63 | 79.75 | 0.09339 | 0.10892 | 0.11285 | 1.08711 | 1.03668 | 3.58635 | 2.84812 | 2.17587 | 7.00460 | 10.73413 |
| 2000 | 96.19 | 82.48 | 79.60 | 0.09357 | 0.10912 | 0.11306 | 1.08913 | 1.03860 | 3.59301 | 2.85340 | 2.17991 | 7.01760 | 10.75406 |
| 2001 | 95.98 | 82.30 | 79.43 | 0.09377 | 0.10935 | 0.11330 | 1.09146 | 1.04083 | 3.60070 | 2.85951 | 2.18457 | 7.03261 | 10.77706 |
| 2002 | 95.75 | 82.10 | 79.24 | 0.09400 | 0.10962 | 0.11358 | 1.09415 | 1.04339 | 3.60958 | 2.86656 | 2.18996 | 7.04996 | 10.80364 |
| 2003 | 95.47 | 81.87 | 79.01 | 0.09427 | 0.10994 | 0.11391 | 1.09727 | 1.04636 | 3.61984 | 2.87471 | 2.19619 | 7.07001 | 10.83437 |
| 2004 | 95.16 | 81.60 | 78.75 | 0.09458 | 0.11030 | 0.11428 | 1.10087 | 1.04979 | 3.63172 | 2.88414 | 2.20339 | 7.09321 | 10.86992 |
| 2005 | 94.80 | 81.29 | 78.46 | 0.09493 | 0.11071 | 0.11471 | 1.10504 | 1.05377 | 3.64548 | 2.89507 | 2.21174 | 7.12008 | 10.91110 |
| 2006 | 94.39 | 80.94 | 78.12 | 0.09535 | 0.11120 | 0.11521 | 1.10987 | 1.05838 | 3.66143 | 2.90774 | 2.22142 | 7.15123 | 10.95884 |
| 2007 | 93.91 | 80.53 | 77.72 | 0.09583 | 0.11176 | 0.11580 | 1.11548 | 1.06373 | 3.67995 | 2.92244 | 2.23265 | 7.18740 | 11.01426 |
| 2008 | 93.37 | 80.06 | 77.27 | 0.09639 | 0.11241 | 0.11647 | 1.12201 | 1.06996 | 3.70147 | 2.93954 | 2.24571 | 7.22944 | 11.07869 |
| 2009 | 92.74 | 79.52 | 76.75 | 0.09705 | 0.11318 | 0.11726 | 1.12961 | 1.07720 | 3.72654 | 2.95944 | 2.26092 | 7.27840 | 11.15372 |
| 2010 | 92.02 | 78.90 | 76.15 | 0.09781 | 0.11406 | 0.11818 | 1.13847 | 1.08566 | 3.75579 | 2.98268 | 2.27867 | 7.33553 | 11.24127 |

FUENTE: Elaboración propia

Cuadro N° A.5.95
COSTO DEL TIEMPO POR VEHICULO, CON UNA TASA DE CRECIMIENTO DE LA DEMANDA DEL 15% ,TRAMO 5. 4°
CARRIL
(km 112-115)

| Año | vel. promedio (km/h) autos, camionetas y autobuses | vel. promedio (km/h) Camiones livianos | vel. promedio (km/h) Camiones pesados | Tiempo promedio en horas autos, camionetas y autobus | Tiempo promedio en h Camiones liv. | Tiempo promedio en h Camiones pes. | \$ tiempo Autos | \$ tiempo Camionetas | \$ tiempo Choferes de autobus | \$ tiempo Camiones livianos | \$ tiempo Camiones pesados | \$ tiempo Pasajeros de autobus | Total \$ |
|------|--|--|---|--|--|--|--------------------|-------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------------|-------------|
| 1995 | 97.17 | 83.32 | 80.42 | 0.03087 | 0.03600 | 0.03730 | 0.35936 | 0.34269 | 1.18552 | 0.94149 | 0.71926 | 2.31547 | 3.54832 |
| 1996 | 97.11 | 83.27 | 80.37 | 0.03089 | 0.03603 | 0.03733 | 0.35957 | 0.34289 | 1.18622 | 0.94204 | 0.71969 | 2.31684 | 3.55042 |
| 1997 | 97.05 | 83.22 | 80.32 | 0.03091 | 0.03605 | 0.03735 | 0.35982 | 0.34313 | 1.18703 | 0.94268 | 0.72018 | 2.31842 | 3.55284 |
| 1998 | 96.97 | 83.15 | 80.25 | 0.03094 | 0.03608 | 0.03738 | 0.36010 | 0.34340 | 1.18796 | 0.94342 | 0.72075 | 2.32024 | 3.55563 |
| 1999 | 96.89 | 83.08 | 80.18 | 0.03096 | 0.03611 | 0.03742 | 0.36043 | 0.34370 | 1.18903 | 0.94427 | 0.72140 | 2.32233 | 3.55883 |
| 2000 | 96.78 | 82.99 | 80.10 | 0.03100 | 0.03615 | 0.03745 | 0.36080 | 0.34406 | 1.19027 | 0.94525 | 0.72214 | 2.32474 | 3.56253 |
| 2001 | 96.67 | 82.89 | 80.00 | 0.03103 | 0.03619 | 0.03750 | 0.36123 | 0.34447 | 1.19169 | 0.94639 | 0.72301 | 2.32752 | 3.56679 |
| 2002 | 96.54 | 82.78 | 79.89 | 0.03108 | 0.03624 | 0.03755 | 0.36173 | 0.34495 | 1.19333 | 0.94769 | 0.72400 | 2.33073 | 3.57170 |
| 2003 | 96.38 | 82.65 | 79.77 | 0.03113 | 0.03630 | 0.03761 | 0.36230 | 0.34549 | 1.19522 | 0.94919 | 0.72515 | 2.33442 | 3.57736 |
| 2004 | 96.21 | 82.50 | 79.62 | 0.03118 | 0.03637 | 0.03768 | 0.36296 | 0.34613 | 1.19741 | 0.95093 | 0.72648 | 2.33869 | 3.58390 |
| 2005 | 96.01 | 82.32 | 79.45 | 0.03125 | 0.03644 | 0.03776 | 0.36373 | 0.34685 | 1.19993 | 0.95293 | 0.72801 | 2.34361 | 3.59145 |
| 2006 | 95.77 | 82.12 | 79.26 | 0.03132 | 0.03653 | 0.03785 | 0.36461 | 0.34770 | 1.20284 | 0.95524 | 0.72977 | 2.34930 | 3.60017 |
| 2007 | 95.51 | 81.89 | 79.04 | 0.03141 | 0.03663 | 0.03796 | 0.36563 | 0.34867 | 1.20621 | 0.95792 | 0.73182 | 2.35588 | 3.61025 |
| 2008 | 95.20 | 81.63 | 78.78 | 0.03151 | 0.03675 | 0.03808 | 0.36681 | 0.34980 | 1.21011 | 0.96101 | 0.73418 | 2.36349 | 3.62191 |
| 2009 | 94.84 | 81.33 | 78.49 | 0.03163 | 0.03689 | 0.03822 | 0.36818 | 0.35110 | 1.21462 | 0.96459 | 0.73692 | 2.37230 | 3.63541 |
| 2010 | 94.44 | 80.98 | 78.16 | 0.03177 | 0.03705 | 0.03838 | 0.36977 | 0.35261 | 1.21985 | 0.96875 | 0.74009 | 2.38251 | 3.65106 |

FUENTE: Elaboración propia

Cuadro N° A.5.96
PROYECTO AMPLIACIÓN A UN 4° CARRIL VS 3^{er}. CARRIL.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 15%. TRAMO 1

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 2.53790 | 2.51615 | 0.02175 | 2.42016 | 2.39942 | 0.02074 | 6.64901 | 6.59202 | 0.05699 | 5.07963 | 5.03609 | 0.04354 | 8.37245 | 8.30069 | 0.07176 | 16.35245 | 16.21229 | 0.14016 |
| 1996 | 2.54281 | 2.51773 | 0.02508 | 2.42484 | 2.40093 | 0.02392 | 6.66187 | 6.59616 | 0.06571 | 5.08946 | 5.03926 | 0.05020 | 8.38865 | 8.30591 | 0.08274 | 16.38408 | 16.22248 | 0.16160 |
| 1997 | 2.54848 | 2.51955 | 0.02893 | 2.43025 | 2.40266 | 0.02759 | 6.67673 | 6.60094 | 0.07579 | 5.10081 | 5.04291 | 0.05790 | 8.40735 | 8.31192 | 0.09543 | 16.42061 | 16.23422 | 0.18639 |
| 1998 | 2.55503 | 2.52165 | 0.03338 | 2.43650 | 2.40467 | 0.03183 | 6.69389 | 6.60644 | 0.08745 | 5.11392 | 5.04711 | 0.06681 | 8.42896 | 8.31884 | 0.11012 | 16.46282 | 16.24774 | 0.21508 |
| 1999 | 2.56261 | 2.52407 | 0.03854 | 2.44372 | 2.40697 | 0.03675 | 6.71374 | 6.61277 | 0.10097 | 5.12908 | 5.05194 | 0.07713 | 8.45396 | 8.32682 | 0.12714 | 16.51163 | 16.26332 | 0.24831 |
| 2000 | 2.57137 | 2.52685 | 0.04452 | 2.45208 | 2.40963 | 0.04245 | 6.73671 | 6.62007 | 0.11664 | 5.14663 | 5.05752 | 0.08911 | 8.48288 | 8.33601 | 0.14687 | 16.56812 | 16.28127 | 0.28685 |
| 2001 | 2.58153 | 2.53006 | 0.05147 | 2.46177 | 2.41269 | 0.04908 | 6.76332 | 6.62848 | 0.13483 | 5.16696 | 5.06395 | 0.10301 | 8.51639 | 8.34661 | 0.16978 | 16.63357 | 16.30196 | 0.33160 |
| 2002 | 2.59331 | 2.53377 | 0.05954 | 2.47300 | 2.41622 | 0.05678 | 6.79418 | 6.63819 | 0.15599 | 5.19054 | 5.07136 | 0.11917 | 8.55525 | 8.35882 | 0.19643 | 16.70947 | 16.32583 | 0.38365 |
| 2003 | 2.60699 | 2.53804 | 0.06895 | 2.48605 | 2.42030 | 0.06575 | 6.83002 | 6.64938 | 0.18064 | 5.21792 | 5.07991 | 0.13801 | 8.60038 | 8.37292 | 0.22747 | 16.79762 | 16.35336 | 0.44427 |
| 2004 | 2.62290 | 2.54297 | 0.07993 | 2.50122 | 2.42500 | 0.07622 | 6.87171 | 6.66230 | 0.20941 | 5.24977 | 5.08978 | 0.15998 | 8.65288 | 8.38919 | 0.26369 | 16.90015 | 16.38513 | 0.51503 |
| 2005 | 2.64145 | 2.54867 | 0.09278 | 2.51890 | 2.43043 | 0.08847 | 6.92029 | 6.67722 | 0.24307 | 5.28688 | 5.10118 | 0.18570 | 8.71405 | 8.40797 | 0.30608 | 17.01962 | 16.42182 | 0.59780 |
| 2006 | 2.66309 | 2.55525 | 0.10785 | 2.53955 | 2.43670 | 0.10284 | 6.97701 | 6.69446 | 0.28255 | 5.33021 | 5.11435 | 0.21586 | 8.78547 | 8.42968 | 0.35579 | 17.15912 | 16.46422 | 0.69490 |
| 2007 | 2.68843 | 2.56286 | 0.12558 | 2.56371 | 2.44396 | 0.11975 | 7.04339 | 6.71439 | 0.32900 | 5.38093 | 5.12958 | 0.25135 | 8.86906 | 8.45478 | 0.41428 | 17.32239 | 16.51325 | 0.80914 |
| 2008 | 2.71818 | 2.57166 | 0.14651 | 2.59208 | 2.45236 | 0.13972 | 7.12132 | 6.73747 | 0.38385 | 5.44046 | 5.14721 | 0.29325 | 8.96718 | 8.48384 | 0.48335 | 17.51403 | 16.56999 | 0.94404 |
| 2009 | 2.75321 | 2.58187 | 0.17134 | 2.62548 | 2.46209 | 0.16339 | 7.21309 | 6.76420 | 0.44889 | 5.51057 | 5.16763 | 0.34294 | 9.08274 | 8.51750 | 0.56525 | 17.73973 | 16.63574 | 1.10400 |
| 2010 | 2.79462 | 2.59370 | 0.20092 | 2.66498 | 2.47337 | 0.19160 | 7.32160 | 6.79520 | 0.52639 | 5.59346 | 5.19132 | 0.40215 | 9.21937 | 8.55654 | 0.66284 | 18.00659 | 16.71199 | 1.29460 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.91 y A. 5.51

Cuadro N° A.5.97

PROYECTO AMPLIACIÓN A UN 4° CARRIL VS 3^{er}. CARRIL.

AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 15%. TRAMO 2

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 5.5432 | 5.5065 | 0.0366 | 5.2860 | 5.2511 | 0.0349 | 14.5224 | 14.4265 | 0.0959 | 11.0947 | 11.0214 | 0.0733 | 18.2867 | 18.1659 | 0.1208 | 35.7162 | 35.4803 | 0.2359 |
| 1996 | 5.5514 | 5.5093 | 0.0422 | 5.2939 | 5.2537 | 0.0402 | 14.5442 | 14.4336 | 0.1105 | 11.1113 | 11.0268 | 0.0844 | 18.3140 | 18.1749 | 0.1392 | 35.7696 | 35.4978 | 0.2718 |
| 1997 | 5.5610 | 5.5124 | 0.0486 | 5.3030 | 5.2566 | 0.0464 | 14.5692 | 14.4418 | 0.1274 | 11.1304 | 11.0331 | 0.0973 | 18.3456 | 18.1852 | 0.1604 | 35.8312 | 35.5179 | 0.3133 |
| 1998 | 5.5720 | 5.5160 | 0.0561 | 5.3135 | 5.2601 | 0.0535 | 14.5981 | 14.4512 | 0.1469 | 11.1525 | 11.0403 | 0.1122 | 18.3819 | 18.1970 | 0.1850 | 35.9022 | 35.5410 | 0.3612 |
| 1999 | 5.5848 | 5.5201 | 0.0647 | 5.3257 | 5.2640 | 0.0617 | 14.6315 | 14.4620 | 0.1694 | 11.1780 | 11.0485 | 0.1294 | 18.4240 | 18.2106 | 0.2133 | 35.9843 | 35.5676 | 0.4167 |
| 2000 | 5.5995 | 5.5249 | 0.0746 | 5.3397 | 5.2685 | 0.0712 | 14.6700 | 14.4745 | 0.1955 | 11.2074 | 11.0581 | 0.1494 | 18.4725 | 18.2263 | 0.2462 | 36.0792 | 35.5983 | 0.4809 |
| 2001 | 5.6165 | 5.5303 | 0.0862 | 5.3560 | 5.2738 | 0.0822 | 14.7146 | 14.4889 | 0.2258 | 11.2415 | 11.0690 | 0.1725 | 18.5287 | 18.2444 | 0.2843 | 36.1889 | 35.6337 | 0.5552 |
| 2002 | 5.6362 | 5.5367 | 0.0996 | 5.3748 | 5.2798 | 0.0949 | 14.7663 | 14.5054 | 0.2608 | 11.2810 | 11.0817 | 0.1993 | 18.5937 | 18.2653 | 0.3284 | 36.3159 | 35.6744 | 0.6415 |
| 2003 | 5.6591 | 5.5440 | 0.1151 | 5.3965 | 5.2868 | 0.1098 | 14.8261 | 14.5245 | 0.3016 | 11.3267 | 11.0963 | 0.2304 | 18.6691 | 18.2893 | 0.3797 | 36.4630 | 35.7213 | 0.7417 |
| 2004 | 5.6856 | 5.5524 | 0.1332 | 5.4218 | 5.2948 | 0.1270 | 14.8955 | 14.5465 | 0.3490 | 11.3797 | 11.1131 | 0.2666 | 18.7565 | 18.3171 | 0.4394 | 36.6337 | 35.7755 | 0.8582 |
| 2005 | 5.7163 | 5.5621 | 0.1543 | 5.4511 | 5.3040 | 0.1471 | 14.9761 | 14.5720 | 0.4042 | 11.4413 | 11.1325 | 0.3088 | 18.8580 | 18.3490 | 0.5089 | 36.8320 | 35.8380 | 0.9940 |
| 2006 | 5.7521 | 5.5732 | 0.1789 | 5.4853 | 5.3147 | 0.1706 | 15.0699 | 14.6013 | 0.4687 | 11.5130 | 11.1549 | 0.3580 | 18.9761 | 18.3860 | 0.5901 | 37.0627 | 35.9101 | 1.1526 |
| 2007 | 5.7939 | 5.5862 | 0.2077 | 5.5251 | 5.3270 | 0.1981 | 15.1793 | 14.6351 | 0.5441 | 11.5965 | 11.1808 | 0.4157 | 19.1138 | 18.4286 | 0.6852 | 37.3316 | 35.9934 | 1.3382 |
| 2008 | 5.8426 | 5.6011 | 0.2415 | 5.5716 | 5.3413 | 0.2303 | 15.3070 | 14.6743 | 0.6327 | 11.6941 | 11.2107 | 0.4834 | 19.2746 | 18.4779 | 0.7967 | 37.6457 | 36.0897 | 1.5561 |
| 2009 | 5.8997 | 5.6184 | 0.2813 | 5.6260 | 5.3578 | 0.2683 | 15.4566 | 14.7196 | 0.7370 | 11.8083 | 11.2453 | 0.5630 | 19.4629 | 18.5349 | 0.9280 | 38.0136 | 36.2010 | 1.8125 |
| 2010 | 5.9667 | 5.6384 | 0.3283 | 5.6899 | 5.3768 | 0.3131 | 15.6322 | 14.7720 | 0.8602 | 11.9425 | 11.2853 | 0.6572 | 19.6841 | 18.6009 | 1.0832 | 38.4455 | 36.3299 | 2.1156 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.92 y A. 5.52

Cuadro N° A.5.98

PROYECTO AMPLIACIÓN A UN 4° CARRIL VS 3^{er}. CARRIL.

AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 15%. TRAMO 3

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.81060 | 1.79681 | 0.01379 | 1.72660 | 1.71345 | 0.01315 | 4.74356 | 4.70743 | 0.03613 | 3.62393 | 3.59632 | 0.02760 | 5.97310 | 5.92761 | 0.04549 | 11.6662 | 11.5774 | 0.0889 |
| 1996 | 1.81377 | 1.79787 | 0.01590 | 1.72962 | 1.71446 | 0.01516 | 4.75186 | 4.71021 | 0.04165 | 3.63027 | 3.59845 | 0.03182 | 5.98356 | 5.93111 | 0.05244 | 11.6866 | 11.5842 | 0.1024 |
| 1997 | 1.81742 | 1.79909 | 0.01833 | 1.73311 | 1.71563 | 0.01748 | 4.76144 | 4.71342 | 0.04802 | 3.63759 | 3.60090 | 0.03669 | 5.99562 | 5.93515 | 0.06047 | 11.7102 | 11.5921 | 0.1181 |
| 1998 | 1.82165 | 1.80050 | 0.02114 | 1.73714 | 1.71698 | 0.02016 | 4.77251 | 4.71712 | 0.05540 | 3.64605 | 3.60373 | 0.04232 | 6.00956 | 5.93981 | 0.06976 | 11.7374 | 11.6012 | 0.1362 |
| 1999 | 1.82653 | 1.80213 | 0.02440 | 1.74180 | 1.71852 | 0.02327 | 4.78531 | 4.72137 | 0.06394 | 3.65582 | 3.60698 | 0.04884 | 6.02567 | 5.94516 | 0.08051 | 11.7689 | 11.6116 | 0.1572 |
| 2000 | 1.83218 | 1.80400 | 0.02818 | 1.74718 | 1.72031 | 0.02687 | 4.80010 | 4.72627 | 0.07383 | 3.66713 | 3.61072 | 0.05640 | 6.04430 | 5.95134 | 0.09297 | 11.8053 | 11.6237 | 0.1816 |
| 2001 | 1.83872 | 1.80616 | 0.03256 | 1.75342 | 1.72237 | 0.03105 | 4.81723 | 4.73193 | 0.08531 | 3.68021 | 3.61504 | 0.06517 | 6.06588 | 5.95845 | 0.10742 | 11.8474 | 11.6376 | 0.2098 |
| 2002 | 1.84630 | 1.80864 | 0.03765 | 1.76064 | 1.72474 | 0.03591 | 4.83709 | 4.73844 | 0.09864 | 3.69538 | 3.62002 | 0.07536 | 6.09087 | 5.96666 | 0.12421 | 11.8962 | 11.6536 | 0.2426 |
| 2003 | 1.85509 | 1.81151 | 0.04358 | 1.76903 | 1.72747 | 0.04155 | 4.86012 | 4.74596 | 0.11416 | 3.71298 | 3.62576 | 0.08722 | 6.11988 | 5.97612 | 0.14375 | 11.9529 | 11.6721 | 0.2808 |
| 2004 | 1.86530 | 1.81482 | 0.05048 | 1.77877 | 1.73063 | 0.04814 | 4.88688 | 4.75463 | 0.13225 | 3.73342 | 3.63238 | 0.10104 | 6.15357 | 5.98704 | 0.16653 | 12.0187 | 11.6934 | 0.3253 |
| 2005 | 1.87719 | 1.81864 | 0.05854 | 1.79010 | 1.73427 | 0.05583 | 4.91802 | 4.76464 | 0.15338 | 3.75721 | 3.64003 | 0.11718 | 6.19279 | 5.99965 | 0.19314 | 12.0953 | 11.7181 | 0.3772 |
| 2006 | 1.89105 | 1.82306 | 0.06799 | 1.80332 | 1.73848 | 0.06483 | 4.95433 | 4.77621 | 0.17812 | 3.78495 | 3.64887 | 0.13608 | 6.23850 | 6.01421 | 0.22429 | 12.1846 | 11.7465 | 0.4381 |
| 2007 | 1.90724 | 1.82816 | 0.07908 | 1.81876 | 1.74335 | 0.07541 | 4.99675 | 4.78958 | 0.20717 | 3.81736 | 3.65908 | 0.15827 | 6.29192 | 6.03105 | 0.26087 | 12.2889 | 11.7794 | 0.5095 |
| 2008 | 1.92621 | 1.83407 | 0.09214 | 1.83685 | 1.74898 | 0.08786 | 5.04644 | 4.80505 | 0.24139 | 3.85532 | 3.67090 | 0.18442 | 6.35449 | 6.05053 | 0.30396 | 12.4111 | 11.8174 | 0.5937 |
| 2009 | 1.94849 | 1.84090 | 0.10758 | 1.85810 | 1.75550 | 0.10259 | 5.10482 | 4.82296 | 0.28186 | 3.89992 | 3.68459 | 0.21533 | 6.42801 | 6.07309 | 0.35492 | 12.5547 | 11.8615 | 0.6932 |
| 2010 | 1.97476 | 1.84883 | 0.12593 | 1.88315 | 1.76306 | 0.12009 | 5.17365 | 4.84373 | 0.32992 | 3.95251 | 3.70045 | 0.25205 | 6.51468 | 6.09924 | 0.41544 | 12.7240 | 11.9126 | 0.8114 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.93 y A. 5.53

Cuadro N° A.5.99

PROYECTO AMPLIACIÓN A UN 4° CARRIL VS 3^{er}. CARRIL.

AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 15%. TRAMO 4

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.09399 | 1.08139 | 0.01259 | 1.04323 | 1.03123 | 0.01201 | 2.86612 | 2.83313 | 0.03299 | 2.18963 | 2.16442 | 0.02521 | 3.60903 | 3.56748 | 0.04154 | 7.0489 | 6.9677 | 0.0811 |
| 1996 | 1.09707 | 1.08253 | 0.01454 | 1.04618 | 1.03231 | 0.01386 | 2.87421 | 2.83612 | 0.03809 | 2.19580 | 2.16670 | 0.02910 | 3.61921 | 3.57125 | 0.04796 | 7.0688 | 6.9751 | 0.0937 |
| 1997 | 1.10064 | 1.08385 | 0.01679 | 1.04958 | 1.03357 | 0.01601 | 2.88356 | 2.83956 | 0.04400 | 2.20295 | 2.16933 | 0.03361 | 3.63099 | 3.57558 | 0.05540 | 7.0918 | 6.9836 | 0.1082 |
| 1998 | 1.10478 | 1.08537 | 0.01941 | 1.05353 | 1.03501 | 0.01851 | 2.89439 | 2.84353 | 0.05086 | 2.21122 | 2.17237 | 0.03885 | 3.64463 | 3.58059 | 0.06404 | 7.1184 | 6.9933 | 0.1251 |
| 1999 | 1.10957 | 1.08711 | 0.02246 | 1.05810 | 1.03668 | 0.02142 | 2.90695 | 2.84812 | 0.05884 | 2.22082 | 2.17587 | 0.04495 | 3.66044 | 3.58635 | 0.07409 | 7.1493 | 7.0046 | 0.1447 |
| 2000 | 1.11514 | 1.08913 | 0.02600 | 1.06340 | 1.03860 | 0.02480 | 2.92153 | 2.85340 | 0.06813 | 2.23195 | 2.17991 | 0.05205 | 3.67880 | 3.59301 | 0.08579 | 7.1852 | 7.0176 | 0.1676 |
| 2001 | 1.12160 | 1.09146 | 0.03014 | 1.06957 | 1.04083 | 0.02874 | 2.93848 | 2.85951 | 0.07897 | 2.24490 | 2.18457 | 0.06033 | 3.70014 | 3.60070 | 0.09944 | 7.2268 | 7.0326 | 0.1942 |
| 2002 | 1.12914 | 1.09415 | 0.03498 | 1.07675 | 1.04339 | 0.03336 | 2.95821 | 2.86656 | 0.09165 | 2.25998 | 2.18996 | 0.07002 | 3.72498 | 3.60958 | 0.11541 | 7.2754 | 7.0500 | 0.2254 |
| 2003 | 1.13792 | 1.09727 | 0.04066 | 1.08513 | 1.04636 | 0.03877 | 2.98123 | 2.87471 | 0.10652 | 2.27756 | 2.19619 | 0.08138 | 3.75397 | 3.61984 | 0.13413 | 7.3320 | 7.0700 | 0.2620 |
| 2004 | 1.14820 | 1.10087 | 0.04733 | 1.09493 | 1.04979 | 0.04514 | 3.00815 | 2.88414 | 0.12401 | 2.29813 | 2.20339 | 0.09474 | 3.78788 | 3.63172 | 0.15615 | 7.3982 | 7.0932 | 0.3050 |
| 2005 | 1.16025 | 1.10504 | 0.05521 | 1.10642 | 1.05377 | 0.05265 | 3.03972 | 2.89507 | 0.14465 | 2.32225 | 2.21174 | 0.11051 | 3.82763 | 3.64548 | 0.18215 | 7.4758 | 7.1201 | 0.3558 |
| 2006 | 1.17442 | 1.10987 | 0.06455 | 1.11994 | 1.05838 | 0.06156 | 3.07686 | 2.90774 | 0.16912 | 2.35062 | 2.22142 | 0.12920 | 3.87439 | 3.66143 | 0.21296 | 7.5672 | 7.1512 | 0.4159 |
| 2007 | 1.19116 | 1.11548 | 0.07567 | 1.13590 | 1.06373 | 0.07216 | 3.12070 | 2.92244 | 0.19826 | 2.38411 | 2.23265 | 0.15146 | 3.92959 | 3.67995 | 0.24965 | 7.6750 | 7.1874 | 0.4876 |
| 2008 | 1.21100 | 1.12201 | 0.08899 | 1.15482 | 1.06996 | 0.08486 | 3.17269 | 2.93954 | 0.23315 | 2.42383 | 2.24571 | 0.17812 | 3.99506 | 3.70147 | 0.29358 | 7.8028 | 7.2294 | 0.5734 |
| 2009 | 1.23465 | 1.12961 | 0.10505 | 1.17738 | 1.07720 | 0.10017 | 3.23466 | 2.95944 | 0.27521 | 2.47117 | 2.26092 | 0.21025 | 4.07309 | 3.72654 | 0.34655 | 7.9552 | 7.2784 | 0.6768 |
| 2010 | 1.26302 | 1.13847 | 0.12455 | 1.20443 | 1.08566 | 0.11877 | 3.30898 | 2.98268 | 0.32631 | 2.52796 | 2.27867 | 0.24929 | 4.16668 | 3.75579 | 0.41089 | 8.1380 | 7.3355 | 0.8025 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.94 y A. 5.54

Cuadro N° A.5.100

PROYECTO AMPLIACIÓN A UN 4° CARRIL VS 3^{er}. CARRIL.

AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 15%. TRAMO 5

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 0.36199 | 0.35936 | 0.00263 | 0.34520 | 0.34269 | 0.00251 | 0.94837 | 0.94149 | 0.00689 | 0.72453 | 0.71926 | 0.00526 | 1.19419 | 1.18552 | 0.00867 | 2.3324 | 2.3155 | 0.0169 |
| 1996 | 0.36260 | 0.35957 | 0.00303 | 0.34578 | 0.34289 | 0.00289 | 0.94998 | 0.94204 | 0.00794 | 0.72576 | 0.71969 | 0.00607 | 1.19622 | 1.18622 | 0.01000 | 2.3364 | 2.3168 | 0.0195 |
| 1997 | 0.36331 | 0.35982 | 0.00349 | 0.34646 | 0.34313 | 0.00333 | 0.95184 | 0.94268 | 0.00915 | 0.72717 | 0.72018 | 0.00699 | 1.19856 | 1.18703 | 0.01153 | 2.3409 | 2.3184 | 0.0225 |
| 1998 | 0.36413 | 0.36010 | 0.00403 | 0.34724 | 0.34340 | 0.00384 | 0.95398 | 0.94342 | 0.01056 | 0.72881 | 0.72075 | 0.00807 | 1.20126 | 1.18796 | 0.01330 | 2.3462 | 2.3202 | 0.0260 |
| 1999 | 0.36508 | 0.36043 | 0.00465 | 0.34814 | 0.34370 | 0.00444 | 0.95646 | 0.94427 | 0.01219 | 0.73070 | 0.72140 | 0.00931 | 1.20438 | 1.18903 | 0.01534 | 2.3523 | 2.3223 | 0.0300 |
| 2000 | 0.36617 | 0.36080 | 0.00537 | 0.34918 | 0.34406 | 0.00512 | 0.95932 | 0.94525 | 0.01407 | 0.73289 | 0.72214 | 0.01075 | 1.20798 | 1.19027 | 0.01772 | 2.3593 | 2.3247 | 0.0346 |
| 2001 | 0.36744 | 0.36123 | 0.00620 | 0.35039 | 0.34447 | 0.00592 | 0.96264 | 0.94639 | 0.01626 | 0.73543 | 0.72301 | 0.01242 | 1.21216 | 1.19169 | 0.02047 | 2.3675 | 2.3275 | 0.0400 |
| 2002 | 0.36890 | 0.36173 | 0.00717 | 0.35179 | 0.34495 | 0.00684 | 0.96648 | 0.94769 | 0.01879 | 0.73836 | 0.72400 | 0.01436 | 1.21700 | 1.19333 | 0.02367 | 2.3769 | 2.3307 | 0.0462 |
| 2003 | 0.37060 | 0.36230 | 0.00830 | 0.35341 | 0.34549 | 0.00792 | 0.97094 | 0.94919 | 0.02175 | 0.74177 | 0.72515 | 0.01661 | 1.22261 | 1.19522 | 0.02738 | 2.3879 | 2.3344 | 0.0535 |
| 2004 | 0.37258 | 0.36296 | 0.00961 | 0.35529 | 0.34613 | 0.00917 | 0.97611 | 0.95093 | 0.02519 | 0.74572 | 0.72648 | 0.01924 | 1.22913 | 1.19741 | 0.03172 | 2.4006 | 2.3387 | 0.0619 |
| 2005 | 0.37488 | 0.36373 | 0.01115 | 0.35749 | 0.34685 | 0.01063 | 0.98214 | 0.95293 | 0.02921 | 0.75032 | 0.72801 | 0.02231 | 1.23671 | 1.19993 | 0.03678 | 2.4154 | 2.3436 | 0.0718 |
| 2006 | 0.37756 | 0.36461 | 0.01294 | 0.36004 | 0.34770 | 0.01234 | 0.98915 | 0.95524 | 0.03391 | 0.75568 | 0.72977 | 0.02591 | 1.24554 | 1.20284 | 0.04270 | 2.4327 | 2.3493 | 0.0834 |
| 2007 | 0.38068 | 0.36563 | 0.01505 | 0.36302 | 0.34867 | 0.01435 | 0.99735 | 0.95792 | 0.03943 | 0.76194 | 0.73182 | 0.03012 | 1.25586 | 1.20621 | 0.04965 | 2.4529 | 2.3559 | 0.0970 |
| 2008 | 0.38434 | 0.36681 | 0.01753 | 0.36651 | 0.34980 | 0.01672 | 1.00694 | 0.96101 | 0.04593 | 0.76927 | 0.73418 | 0.03509 | 1.26794 | 1.21011 | 0.05783 | 2.4764 | 2.3635 | 0.1130 |
| 2009 | 0.38864 | 0.36818 | 0.02046 | 0.37061 | 0.35110 | 0.01951 | 1.01820 | 0.96459 | 0.05361 | 0.77787 | 0.73692 | 0.04095 | 1.28212 | 1.21462 | 0.06750 | 2.5041 | 2.3723 | 0.1318 |
| 2010 | 0.39371 | 0.36977 | 0.02394 | 0.37544 | 0.35261 | 0.02283 | 1.03147 | 0.96875 | 0.06272 | 0.78801 | 0.74009 | 0.04792 | 1.29883 | 1.21985 | 0.07898 | 2.5368 | 2.3825 | 0.1543 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.95 y A. 5.55

Cuadro N° A.5.101

PROYECTO AMPLIACIÓN A 4 CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 3.5%. TRAMO 1

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 2.68486 | 2.51615 | 0.16872 | 2.56031 | 2.39942 | 0.16089 | 7.03404 | 6.59202 | 0.44202 | 5.37378 | 5.03609 | 0.33769 | 8.85729 | 8.30069 | 0.55660 | 17.29939 | 16.21229 | 1.08710 |
| 1996 | 2.69538 | 2.51652 | 0.17887 | 2.57034 | 2.39977 | 0.17057 | 7.06160 | 6.59299 | 0.46861 | 5.39483 | 5.03683 | 0.35800 | 8.89198 | 8.30191 | 0.59008 | 17.36715 | 16.21466 | 1.15249 |
| 1997 | 2.70636 | 2.51690 | 0.18946 | 2.58080 | 2.40013 | 0.18067 | 7.09034 | 6.59399 | 0.49636 | 5.41680 | 5.03760 | 0.37920 | 8.92818 | 8.30317 | 0.62501 | 17.43785 | 16.21712 | 1.22073 |
| 1998 | 2.71781 | 2.51729 | 0.20051 | 2.59172 | 2.40051 | 0.19121 | 7.12034 | 6.59502 | 0.52532 | 5.43972 | 5.03839 | 0.40133 | 8.96596 | 8.30447 | 0.66149 | 17.51164 | 16.21967 | 1.29197 |
| 1999 | 2.72976 | 2.51770 | 0.21206 | 2.60312 | 2.40090 | 0.20222 | 7.15166 | 6.59610 | 0.55557 | 5.46364 | 5.03921 | 0.42444 | 9.00540 | 8.30582 | 0.69957 | 17.58867 | 16.22231 | 1.36635 |
| 2000 | 2.74225 | 2.51813 | 0.22412 | 2.61503 | 2.40131 | 0.21372 | 7.18437 | 6.59721 | 0.58716 | 5.48863 | 5.04006 | 0.44857 | 9.04658 | 8.30722 | 0.73936 | 17.66910 | 16.22504 | 1.44406 |
| 2001 | 2.75529 | 2.51857 | 0.23672 | 2.62746 | 2.40173 | 0.22574 | 7.21854 | 6.59836 | 0.62018 | 5.51473 | 5.04093 | 0.47380 | 9.08961 | 8.30867 | 0.78094 | 17.75314 | 16.22787 | 1.52527 |
| 2002 | 2.76892 | 2.51902 | 0.24990 | 2.64046 | 2.40216 | 0.23830 | 7.25425 | 6.59955 | 0.65470 | 5.54201 | 5.04184 | 0.50017 | 9.13457 | 8.31017 | 0.82440 | 17.84096 | 16.23080 | 1.61016 |
| 2003 | 2.78317 | 2.51949 | 0.26368 | 2.65405 | 2.40261 | 0.25144 | 7.29158 | 6.60078 | 0.69080 | 5.57053 | 5.04279 | 0.52775 | 9.18158 | 8.31172 | 0.86986 | 17.93277 | 16.23383 | 1.69894 |
| 2004 | 2.79807 | 2.51998 | 0.27809 | 2.66826 | 2.40307 | 0.26519 | 7.33063 | 6.60206 | 0.72857 | 5.60036 | 5.04376 | 0.55660 | 9.23075 | 8.31333 | 0.91742 | 18.02880 | 16.23697 | 1.79183 |
| 2005 | 2.81366 | 2.52048 | 0.29318 | 2.68313 | 2.40355 | 0.27958 | 7.37148 | 6.60338 | 0.76810 | 5.63158 | 5.04477 | 0.58681 | 9.28219 | 8.31499 | 0.96720 | 18.12928 | 16.24022 | 1.88906 |
| 2006 | 2.82999 | 2.52100 | 0.30898 | 2.69870 | 2.40405 | 0.29465 | 7.41425 | 6.60475 | 0.80950 | 5.66425 | 5.04582 | 0.61843 | 9.33604 | 8.31672 | 1.01933 | 18.23446 | 16.24359 | 1.99087 |
| 2007 | 2.84640 | 2.52155 | 0.32485 | 2.71435 | 2.40457 | 0.30978 | 7.45724 | 6.60616 | 0.85107 | 5.69709 | 5.04690 | 0.65019 | 9.39017 | 8.31850 | 1.07167 | 18.34018 | 16.24707 | 2.09311 |
| 2008 | 2.86170 | 2.52211 | 0.33960 | 2.72894 | 2.40510 | 0.32384 | 7.49733 | 6.60763 | 0.88970 | 5.72772 | 5.04802 | 0.67970 | 9.44066 | 8.32035 | 1.12032 | 18.43880 | 16.25068 | 2.18812 |
| 2009 | 2.87772 | 2.52269 | 0.35503 | 2.74421 | 2.40565 | 0.33856 | 7.53929 | 6.60915 | 0.93014 | 5.75978 | 5.04918 | 0.71060 | 9.49350 | 8.32226 | 1.17124 | 18.54199 | 16.25442 | 2.28757 |
| 2010 | 2.89448 | 2.52329 | 0.37120 | 2.76020 | 2.40623 | 0.35398 | 7.58322 | 6.61072 | 0.97249 | 5.79334 | 5.05038 | 0.74295 | 9.54881 | 8.32424 | 1.22457 | 18.65002 | 16.25829 | 2.39173 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.61 y A. 5.1

Cuadro N° A.5.102
PROYECTO AMPLIACIÓN A 4 CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 3.5%. TRAMO 2

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 5.93277 | 5.50855 | 0.42622 | 5.65754 | 5.25109 | 0.40645 | 15.54319 | 14.42654 | 1.11666 | 11.87450 | 11.02141 | 0.85309 | 19.57203 | 18.16593 | 1.40610 | 38.22663 | 35.48034 | 2.74629 |
| 1996 | 5.94624 | 5.50718 | 0.43906 | 5.67038 | 5.25169 | 0.41869 | 15.57847 | 14.42819 | 1.15028 | 11.90146 | 11.02268 | 0.87878 | 19.61646 | 18.16802 | 1.44844 | 38.31340 | 35.48441 | 2.82899 |
| 1997 | 5.96024 | 5.50783 | 0.45241 | 5.68374 | 5.25232 | 0.43142 | 15.61516 | 14.42990 | 1.18526 | 11.92948 | 11.02398 | 0.90550 | 19.66266 | 18.17018 | 1.49248 | 38.40362 | 35.48862 | 2.91500 |
| 1998 | 5.97480 | 5.50851 | 0.46629 | 5.69762 | 5.25296 | 0.44466 | 15.65331 | 14.43168 | 1.22164 | 11.95863 | 11.02534 | 0.93329 | 19.71070 | 18.17241 | 1.53829 | 38.49745 | 35.49299 | 3.00447 |
| 1999 | 5.98995 | 5.50921 | 0.48074 | 5.71207 | 5.25363 | 0.45844 | 15.69300 | 14.43351 | 1.25949 | 11.98895 | 11.02674 | 0.96221 | 19.76067 | 18.17472 | 1.58595 | 38.59505 | 35.49750 | 3.09755 |
| 2000 | 6.00571 | 5.50994 | 0.49577 | 5.72710 | 5.25432 | 0.47277 | 15.73428 | 14.43541 | 1.29887 | 12.02049 | 11.02819 | 0.99230 | 19.81265 | 18.17711 | 1.63554 | 38.69659 | 35.50217 | 3.19442 |
| 2001 | 6.02211 | 5.51069 | 0.51142 | 5.74273 | 5.25504 | 0.48769 | 15.77724 | 14.43738 | 1.33986 | 12.05331 | 11.02970 | 1.02361 | 19.86675 | 18.17959 | 1.68716 | 38.80225 | 35.50701 | 3.29523 |
| 2002 | 6.03918 | 5.51147 | 0.52771 | 5.75901 | 5.25578 | 0.50323 | 15.82196 | 14.43942 | 1.38254 | 12.08747 | 11.03125 | 1.05621 | 19.92305 | 18.18216 | 1.74090 | 38.91221 | 35.51202 | 3.40019 |
| 2003 | 6.05694 | 5.51227 | 0.54467 | 5.77595 | 5.25655 | 0.51940 | 15.86850 | 14.44153 | 1.42697 | 12.12303 | 11.03286 | 1.09016 | 19.98166 | 18.18481 | 1.79685 | 39.02668 | 35.51721 | 3.50947 |
| 2004 | 6.07544 | 5.51310 | 0.56233 | 5.79359 | 5.25734 | 0.53625 | 15.91696 | 14.44371 | 1.47325 | 12.16005 | 11.03453 | 1.12552 | 20.04268 | 18.18756 | 1.85512 | 39.14587 | 35.52258 | 3.62329 |
| 2005 | 6.09470 | 5.51397 | 0.58074 | 5.81196 | 5.25816 | 0.55379 | 15.96743 | 14.44597 | 1.52146 | 12.19861 | 11.03626 | 1.16235 | 20.10624 | 18.19041 | 1.91583 | 39.27000 | 35.52814 | 3.74186 |
| 2006 | 6.11477 | 5.51486 | 0.59991 | 5.83110 | 5.25902 | 0.57208 | 16.02001 | 14.44831 | 1.57170 | 12.23877 | 11.03805 | 1.20073 | 20.17244 | 18.19336 | 1.97909 | 39.39930 | 35.53390 | 3.86540 |
| 2007 | 6.13568 | 5.51579 | 0.61990 | 5.85104 | 5.25990 | 0.59114 | 16.07479 | 14.45073 | 1.62406 | 12.28063 | 11.03990 | 1.24073 | 20.24142 | 18.19641 | 2.04502 | 39.53403 | 35.53986 | 3.99418 |
| 2008 | 6.15747 | 5.51674 | 0.64073 | 5.87182 | 5.26081 | 0.61101 | 16.13189 | 14.45324 | 1.67864 | 12.32425 | 11.04182 | 1.28243 | 20.31332 | 18.19957 | 2.11375 | 39.67445 | 35.54603 | 4.12843 |
| 2009 | 6.18019 | 5.51773 | 0.66246 | 5.89348 | 5.26176 | 0.63173 | 16.19141 | 14.45584 | 1.73557 | 12.36972 | 11.04380 | 1.32592 | 20.38827 | 18.20284 | 2.18543 | 39.82084 | 35.55241 | 4.26843 |
| 2010 | 6.20389 | 5.51876 | 0.68513 | 5.91608 | 5.26274 | 0.65334 | 16.25348 | 14.45853 | 1.79495 | 12.41714 | 11.04585 | 1.37128 | 20.46643 | 18.20622 | 2.26021 | 39.97349 | 35.55903 | 4.41447 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.62 y A. 5. 2

Cuadro N° A.5.103

PROYECTO AMPLIACIÓN A 4 CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 3.5%. TRAMO 3

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.95289 | 1.79681 | 0.15608 | 1.86229 | 1.71345 | 0.14884 | 5.11635 | 4.70743 | 0.40892 | 3.90873 | 3.59632 | 0.31241 | 6.44253 | 5.92761 | 0.51492 | 12.58306 | 11.57736 | 1.00570 |
| 1996 | 1.95798 | 1.79705 | 0.16093 | 1.86715 | 1.71369 | 0.15346 | 5.12968 | 4.70808 | 0.42161 | 3.91891 | 3.59682 | 0.32209 | 6.45931 | 5.92843 | 0.53089 | 12.61585 | 11.57896 | 1.03689 |
| 1997 | 1.96327 | 1.79731 | 0.16596 | 1.87219 | 1.71393 | 0.15826 | 5.14356 | 4.70875 | 0.43481 | 3.92951 | 3.59733 | 0.33218 | 6.47678 | 5.92927 | 0.54751 | 12.64996 | 11.58061 | 1.06935 |
| 1998 | 1.96878 | 1.79758 | 0.17121 | 1.87745 | 1.71418 | 0.16327 | 5.15799 | 4.70945 | 0.44854 | 3.94054 | 3.59787 | 0.34267 | 6.49496 | 5.93015 | 0.56481 | 12.68546 | 11.58232 | 1.10314 |
| 1999 | 1.97452 | 1.79785 | 0.17667 | 1.88292 | 1.71445 | 0.16847 | 5.17302 | 4.71017 | 0.46285 | 3.95202 | 3.59842 | 0.35360 | 6.51388 | 5.93106 | 0.58282 | 12.72242 | 11.58410 | 1.13833 |
| 2000 | 1.98049 | 1.79814 | 0.18235 | 1.88861 | 1.71472 | 0.17390 | 5.18866 | 4.71091 | 0.47775 | 3.96397 | 3.59899 | 0.36499 | 6.53358 | 5.93200 | 0.60158 | 12.76090 | 11.58593 | 1.17497 |
| 2001 | 1.98671 | 1.79843 | 0.18828 | 1.89454 | 1.71500 | 0.17954 | 5.20496 | 4.71169 | 0.49327 | 3.97642 | 3.59958 | 0.37684 | 6.55410 | 5.93297 | 0.62113 | 12.80097 | 11.58783 | 1.21314 |
| 2002 | 1.99319 | 1.79874 | 0.19445 | 1.90072 | 1.71529 | 0.18543 | 5.22193 | 4.71249 | 0.50944 | 3.98939 | 3.60019 | 0.38920 | 6.57547 | 5.93398 | 0.64149 | 12.84271 | 11.58980 | 1.25291 |
| 2003 | 1.99994 | 1.79905 | 0.20088 | 1.90716 | 1.71559 | 0.19156 | 5.23961 | 4.71332 | 0.52629 | 4.00289 | 3.60082 | 0.40207 | 6.59773 | 5.93502 | 0.66271 | 12.88619 | 11.59184 | 1.29436 |
| 2004 | 2.00697 | 1.79938 | 0.20759 | 1.91386 | 1.71590 | 0.19796 | 5.25804 | 4.71417 | 0.54386 | 4.01697 | 3.60148 | 0.41549 | 6.62094 | 5.93610 | 0.68483 | 12.93151 | 11.59395 | 1.33757 |
| 2005 | 2.01430 | 1.79972 | 0.21458 | 1.92086 | 1.71623 | 0.20463 | 5.27725 | 4.71506 | 0.56219 | 4.03165 | 3.60216 | 0.42949 | 6.64512 | 5.93722 | 0.70791 | 12.97876 | 11.59613 | 1.38263 |
| 2006 | 2.02195 | 1.80007 | 0.22188 | 1.92815 | 1.71656 | 0.21158 | 5.29728 | 4.71598 | 0.58130 | 4.04695 | 3.60286 | 0.44409 | 6.67035 | 5.93838 | 0.73197 | 13.02802 | 11.59839 | 1.42963 |
| 2007 | 2.02988 | 1.80043 | 0.22944 | 1.93571 | 1.71691 | 0.21880 | 5.31805 | 4.71693 | 0.60112 | 4.06282 | 3.60359 | 0.45924 | 6.69651 | 5.93958 | 0.75693 | 13.07911 | 11.60073 | 1.47838 |
| 2008 | 2.03941 | 1.80081 | 0.23860 | 1.94480 | 1.71727 | 0.22753 | 5.34302 | 4.71792 | 0.62510 | 4.08190 | 3.60434 | 0.47756 | 6.72795 | 5.94082 | 0.78713 | 13.14052 | 11.60316 | 1.53736 |
| 2009 | 2.04937 | 1.80120 | 0.24817 | 1.95429 | 1.71764 | 0.23666 | 5.36911 | 4.71894 | 0.65017 | 4.10183 | 3.60512 | 0.49671 | 6.76080 | 5.94210 | 0.81870 | 13.20469 | 11.60567 | 1.59902 |
| 2010 | 2.05978 | 1.80160 | 0.25818 | 1.96422 | 1.71802 | 0.24620 | 5.39639 | 4.72000 | 0.67639 | 4.12267 | 3.60593 | 0.51674 | 6.79515 | 5.94343 | 0.85171 | 13.27177 | 11.60827 | 1.66350 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.63 y A. 5.3

Cuadro N° A.5.104

PROYECTO AMPLIACIÓN A 4 CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 3.5%. TRAMO 4

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.23602 | 1.08139 | 0.15463 | 1.17868 | 1.03123 | 0.14745 | 3.23824 | 2.83313 | 0.40511 | 2.47391 | 2.16442 | 0.30949 | 4.07760 | 3.56748 | 0.51011 | 7.96406 | 6.96774 | 0.99632 |
| 1996 | 1.24112 | 1.08166 | 0.15946 | 1.18354 | 1.03148 | 0.15206 | 3.25160 | 2.83383 | 0.41777 | 2.48411 | 2.16495 | 0.31916 | 4.09442 | 3.56836 | 0.52606 | 7.99691 | 6.96946 | 1.02745 |
| 1997 | 1.24644 | 1.08193 | 0.16451 | 1.18862 | 1.03174 | 0.15688 | 3.26554 | 2.83455 | 0.43099 | 2.49477 | 2.16550 | 0.32926 | 4.11197 | 3.56927 | 0.54270 | 8.03120 | 6.97123 | 1.05997 |
| 1998 | 1.25200 | 1.08222 | 0.16978 | 1.19392 | 1.03201 | 0.16190 | 3.28009 | 2.83529 | 0.44480 | 2.50589 | 2.16607 | 0.33981 | 4.13030 | 3.57021 | 0.56009 | 8.06700 | 6.97307 | 1.09393 |
| 1999 | 1.25780 | 1.08252 | 0.17529 | 1.19945 | 1.03230 | 0.16715 | 3.29530 | 2.83607 | 0.45923 | 2.51750 | 2.16667 | 0.35084 | 4.14945 | 3.57118 | 0.57826 | 8.10439 | 6.97497 | 1.12942 |
| 2000 | 1.26386 | 1.08282 | 0.18104 | 1.20523 | 1.03259 | 0.17264 | 3.31118 | 2.83687 | 0.47431 | 2.52964 | 2.16728 | 0.36236 | 4.16945 | 3.57219 | 0.59726 | 8.14346 | 6.97694 | 1.16652 |
| 2001 | 1.27020 | 1.08314 | 0.18706 | 1.21128 | 1.03289 | 0.17839 | 3.32779 | 2.83770 | 0.49009 | 2.54232 | 2.16791 | 0.37441 | 4.19036 | 3.57324 | 0.61712 | 8.18429 | 6.97898 | 1.20531 |
| 2002 | 1.28248 | 1.08347 | 0.19901 | 1.22298 | 1.03320 | 0.18978 | 3.35995 | 2.83856 | 0.52139 | 2.56689 | 2.16857 | 0.39832 | 4.23085 | 3.57432 | 0.65653 | 8.26339 | 6.98110 | 1.28229 |
| 2003 | 1.29011 | 1.08381 | 0.20631 | 1.23026 | 1.03353 | 0.19674 | 3.37995 | 2.83945 | 0.54050 | 2.58218 | 2.16925 | 0.41293 | 4.25605 | 3.57544 | 0.68060 | 8.31259 | 6.98328 | 1.32930 |
| 2004 | 1.29811 | 1.08416 | 0.21396 | 1.23789 | 1.03386 | 0.20403 | 3.40091 | 2.84037 | 0.56054 | 2.59819 | 2.16995 | 0.42824 | 4.28244 | 3.57660 | 0.70583 | 8.36413 | 6.98555 | 1.37858 |
| 2005 | 1.30650 | 1.08452 | 0.22198 | 1.24589 | 1.03421 | 0.21168 | 3.42288 | 2.84132 | 0.58155 | 2.61497 | 2.17068 | 0.44429 | 4.31010 | 3.57780 | 0.73229 | 8.41816 | 6.98790 | 1.43026 |
| 2006 | 1.31529 | 1.08490 | 0.23039 | 1.25427 | 1.03457 | 0.21970 | 3.44592 | 2.84231 | 0.60360 | 2.63257 | 2.17144 | 0.46113 | 4.33911 | 3.57905 | 0.76006 | 8.47482 | 6.99033 | 1.48449 |
| 2007 | 1.32452 | 1.08529 | 0.23923 | 1.26307 | 1.03494 | 0.22813 | 3.47009 | 2.84334 | 0.62675 | 2.65104 | 2.17222 | 0.47882 | 4.36955 | 3.58034 | 0.78921 | 8.53427 | 6.99285 | 1.54142 |
| 2008 | 1.33421 | 1.08569 | 0.24851 | 1.27231 | 1.03533 | 0.23698 | 3.49547 | 2.84440 | 0.65107 | 2.67043 | 2.17303 | 0.49740 | 4.40150 | 3.58167 | 0.81983 | 8.59669 | 6.99546 | 1.60123 |
| 2009 | 1.34438 | 1.08611 | 0.25827 | 1.28201 | 1.03573 | 0.24629 | 3.52213 | 2.84550 | 0.67663 | 2.69079 | 2.17387 | 0.51693 | 4.43507 | 3.58306 | 0.85202 | 8.66226 | 6.99816 | 1.66410 |
| 2010 | 1.35508 | 1.08655 | 0.26853 | 1.29221 | 1.03614 | 0.25607 | 3.55015 | 2.84663 | 0.70352 | 2.71220 | 2.17474 | 0.53747 | 4.47036 | 3.58449 | 0.88587 | 8.73118 | 7.00096 | 1.73022 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.64 y A. 5.4

Cuadro N° A.5.105

PROYECTO AMPLIACIÓN A 4 CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 3.5%. TRAMO 5

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 0.37864 | 0.35936 | 0.01928 | 0.36107 | 0.34269 | 0.01838 | 0.99199 | 0.94149 | 0.05050 | 0.75785 | 0.71926 | 0.03858 | 1.24912 | 1.18552 | 0.06359 | 2.43968 | 2.31547 | 0.12421 |
| 1996 | 0.37990 | 0.35941 | 0.02049 | 0.36228 | 0.34274 | 0.01954 | 0.99530 | 0.94162 | 0.05368 | 0.76038 | 0.71936 | 0.04101 | 1.25328 | 1.18569 | 0.06760 | 2.44782 | 2.31579 | 0.13203 |
| 1997 | 0.38122 | 0.35946 | 0.02176 | 0.36353 | 0.34279 | 0.02075 | 0.99875 | 0.94175 | 0.05700 | 0.76301 | 0.71947 | 0.04355 | 1.25763 | 1.18585 | 0.07177 | 2.45630 | 2.31612 | 0.14018 |
| 1998 | 0.38259 | 0.35952 | 0.02308 | 0.36484 | 0.34284 | 0.02200 | 1.00234 | 0.94189 | 0.06045 | 0.76576 | 0.71957 | 0.04619 | 1.26215 | 1.18603 | 0.07612 | 2.46514 | 2.31646 | 0.14868 |
| 1999 | 0.38402 | 0.35957 | 0.02445 | 0.36621 | 0.34289 | 0.02332 | 1.00609 | 0.94203 | 0.06406 | 0.76862 | 0.71968 | 0.04894 | 1.26687 | 1.18621 | 0.08066 | 2.47436 | 2.31682 | 0.15754 |
| 2000 | 0.38551 | 0.35963 | 0.02589 | 0.36763 | 0.34294 | 0.02469 | 1.01000 | 0.94218 | 0.06782 | 0.77161 | 0.71980 | 0.05181 | 1.27180 | 1.18640 | 0.08540 | 2.48398 | 2.31719 | 0.16679 |
| 2001 | 0.38707 | 0.35969 | 0.02738 | 0.36911 | 0.34300 | 0.02611 | 1.01408 | 0.94234 | 0.07174 | 0.77472 | 0.71992 | 0.05481 | 1.27693 | 1.18659 | 0.09034 | 2.49401 | 2.31757 | 0.17644 |
| 2002 | 0.38869 | 0.35975 | 0.02895 | 0.37066 | 0.34306 | 0.02760 | 1.01834 | 0.94250 | 0.07584 | 0.77798 | 0.72004 | 0.05794 | 1.28229 | 1.18680 | 0.09550 | 2.50447 | 2.31796 | 0.18651 |
| 2003 | 0.39039 | 0.35981 | 0.03058 | 0.37228 | 0.34312 | 0.02916 | 1.02278 | 0.94266 | 0.08011 | 0.78137 | 0.72016 | 0.06120 | 1.28788 | 1.18700 | 0.10088 | 2.51540 | 2.31837 | 0.19703 |
| 2004 | 0.39216 | 0.35988 | 0.03228 | 0.37397 | 0.34318 | 0.03079 | 1.02742 | 0.94283 | 0.08458 | 0.78491 | 0.72030 | 0.06462 | 1.29373 | 1.18722 | 0.10651 | 2.52681 | 2.31879 | 0.20802 |
| 2005 | 0.39401 | 0.35994 | 0.03407 | 0.37573 | 0.34325 | 0.03249 | 1.03226 | 0.94301 | 0.08925 | 0.78862 | 0.72043 | 0.06818 | 1.29983 | 1.18744 | 0.11238 | 2.53873 | 2.31923 | 0.21950 |
| 2006 | 0.39594 | 0.36001 | 0.03593 | 0.37757 | 0.34331 | 0.03426 | 1.03733 | 0.94320 | 0.09413 | 0.79248 | 0.72057 | 0.07191 | 1.30620 | 1.18768 | 0.11853 | 2.55118 | 2.31968 | 0.23150 |
| 2007 | 0.39796 | 0.36009 | 0.03788 | 0.37950 | 0.34338 | 0.03612 | 1.04262 | 0.94339 | 0.09923 | 0.79653 | 0.72072 | 0.07581 | 1.31287 | 1.18792 | 0.12495 | 2.56420 | 2.32015 | 0.24405 |
| 2008 | 0.40008 | 0.36016 | 0.03991 | 0.38152 | 0.34345 | 0.03806 | 1.04816 | 0.94358 | 0.10457 | 0.80076 | 0.72087 | 0.07989 | 1.31984 | 1.18816 | 0.13168 | 2.57781 | 2.32063 | 0.25718 |
| 2009 | 0.40229 | 0.36024 | 0.04205 | 0.38362 | 0.34353 | 0.04010 | 1.05395 | 0.94379 | 0.11016 | 0.80518 | 0.72102 | 0.08416 | 1.32713 | 1.18842 | 0.13871 | 2.59206 | 2.32113 | 0.27092 |
| 2010 | 0.40460 | 0.36032 | 0.04428 | 0.38583 | 0.34360 | 0.04223 | 1.06001 | 0.94400 | 0.11601 | 0.80981 | 0.72119 | 0.08863 | 1.33477 | 1.18869 | 0.14608 | 2.60697 | 2.32165 | 0.28532 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.65 y A. 5.5

Cuadro N° A.5.106

PROYECTO AMPLIACIÓN A 4 CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 7%. TRAMO 1

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 2.68486 | 2.51615 | 0.16872 | 2.56031 | 2.39942 | 0.16089 | 7.03404 | 6.59202 | 0.44202 | 5.37378 | 5.03609 | 0.33769 | 8.85729 | 8.30069 | 0.55660 | 17.29939 | 16.21229 | 1.08710 |
| 1996 | 2.70598 | 2.51688 | 0.18910 | 2.58045 | 2.40012 | 0.18033 | 7.08937 | 6.59395 | 0.49541 | 5.41605 | 5.03757 | 0.37848 | 8.92695 | 8.30313 | 0.62383 | 17.43545 | 16.21704 | 1.21841 |
| 1997 | 2.72895 | 2.51768 | 0.21127 | 2.60235 | 2.40088 | 0.20147 | 7.14954 | 6.59602 | 0.55351 | 5.46202 | 5.03915 | 0.42287 | 9.00272 | 8.30573 | 0.69699 | 17.58344 | 16.22213 | 1.36130 |
| 1998 | 2.75396 | 2.51852 | 0.23544 | 2.62620 | 2.40168 | 0.22452 | 7.21506 | 6.59824 | 0.61682 | 5.51208 | 5.04084 | 0.47123 | 9.08523 | 8.30852 | 0.77670 | 17.74459 | 16.22759 | 1.51700 |
| 1999 | 2.78123 | 2.51943 | 0.26181 | 2.65221 | 2.40255 | 0.24966 | 7.28652 | 6.60061 | 0.68590 | 5.56667 | 5.04266 | 0.52401 | 9.17520 | 8.31151 | 0.86369 | 17.92032 | 16.23342 | 1.68690 |
| 2000 | 2.81102 | 2.52040 | 0.29062 | 2.68061 | 2.40347 | 0.27714 | 7.36456 | 6.60316 | 0.76140 | 5.62629 | 5.04460 | 0.58169 | 9.27347 | 8.31471 | 0.95876 | 18.11225 | 16.23967 | 1.87258 |
| 2001 | 2.84342 | 2.52144 | 0.32199 | 2.71151 | 2.40446 | 0.30705 | 7.44945 | 6.60588 | 0.84357 | 5.69114 | 5.04668 | 0.64446 | 9.38037 | 8.31814 | 1.06223 | 18.32103 | 16.24637 | 2.07466 |
| 2002 | 2.87392 | 2.52255 | 0.35137 | 2.74060 | 2.40552 | 0.33507 | 7.52935 | 6.60879 | 0.92056 | 5.75218 | 5.04891 | 0.70328 | 9.48098 | 8.32181 | 1.15917 | 18.51754 | 16.25354 | 2.26401 |
| 2003 | 2.90729 | 2.52374 | 0.38355 | 2.77242 | 2.40666 | 0.36576 | 7.61677 | 6.61191 | 1.00486 | 5.81897 | 5.05129 | 0.76768 | 9.59106 | 8.32574 | 1.26532 | 18.73254 | 16.26121 | 2.47133 |
| 2004 | 2.94386 | 2.52502 | 0.41885 | 2.80729 | 2.40786 | 0.39942 | 7.71259 | 6.61526 | 1.09733 | 5.89217 | 5.05384 | 0.83832 | 9.71171 | 8.32995 | 1.38176 | 18.96819 | 16.26944 | 2.69875 |
| 2005 | 2.98403 | 2.52638 | 0.45764 | 2.84559 | 2.40918 | 0.43641 | 7.81781 | 6.61884 | 1.19898 | 5.97256 | 5.05658 | 0.91598 | 9.84421 | 8.33446 | 1.50975 | 19.22698 | 16.27824 | 2.94874 |
| 2006 | 3.02824 | 2.52785 | 0.50039 | 2.88775 | 2.41058 | 0.47717 | 7.93364 | 6.62267 | 1.31096 | 6.06104 | 5.05951 | 1.00153 | 9.99006 | 8.33929 | 1.65077 | 19.51183 | 16.28768 | 3.22415 |
| 2007 | 3.07701 | 2.52942 | 0.54760 | 2.93426 | 2.41207 | 0.52219 | 8.06143 | 6.62678 | 1.43464 | 6.15867 | 5.06265 | 1.09602 | 10.15097 | 8.34447 | 1.80650 | 19.82611 | 16.29779 | 3.52833 |
| 2008 | 3.13097 | 2.53110 | 0.59988 | 2.98572 | 2.41367 | 0.57205 | 8.20280 | 6.63119 | 1.57161 | 6.26668 | 5.06601 | 1.20066 | 10.32899 | 8.35001 | 1.97898 | 20.17381 | 16.30861 | 3.86519 |
| 2009 | 3.21111 | 2.53290 | 0.67821 | 3.06214 | 2.41539 | 0.64675 | 8.41274 | 6.63590 | 1.77683 | 6.42706 | 5.06962 | 1.35744 | 10.59334 | 8.35595 | 2.23739 | 20.69012 | 16.32022 | 4.36990 |
| 2010 | 3.30270 | 2.53483 | 0.76787 | 3.14948 | 2.41723 | 0.73225 | 8.65270 | 6.64096 | 2.01174 | 6.61039 | 5.07348 | 1.53691 | 10.89551 | 8.36232 | 2.53319 | 21.28029 | 16.33265 | 4.94764 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.71 y A.5.16

Cuadro N° A.5.107

PROYECTO AMPLIACIÓN A 4 CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 7%. TRAMO 2

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 5.93277 | 5.50855 | 0.42622 | 5.65754 | 5.25109 | 0.40645 | 15.54319 | 14.42654 | 1.11666 | 11.87450 | 11.02141 | 0.85309 | 19.57203 | 18.16593 | 1.40610 | 38.22663 | 35.48034 | 2.74629 |
| 1996 | 5.93277 | 5.50781 | 0.42496 | 5.65754 | 5.25230 | 0.40525 | 15.54319 | 14.42984 | 1.11335 | 11.87450 | 11.02394 | 0.85056 | 19.57203 | 18.17010 | 1.40193 | 38.22663 | 35.48848 | 2.73815 |
| 1997 | 5.93277 | 5.50916 | 0.42361 | 5.65754 | 5.25358 | 0.40396 | 15.54319 | 14.43339 | 1.10980 | 11.87450 | 11.02665 | 0.84786 | 19.57203 | 18.17456 | 1.39747 | 38.22663 | 35.49720 | 2.72943 |
| 1998 | 5.93277 | 5.51061 | 0.42216 | 5.65754 | 5.25497 | 0.40258 | 15.54319 | 14.43718 | 1.10601 | 11.87450 | 11.02954 | 0.84496 | 19.57203 | 18.17934 | 1.39269 | 38.22663 | 35.50652 | 2.72010 |
| 1999 | 5.93277 | 5.51216 | 0.42061 | 5.65754 | 5.25644 | 0.40110 | 15.54319 | 14.44124 | 1.10195 | 11.87450 | 11.03265 | 0.84186 | 19.57203 | 18.18445 | 1.38758 | 38.22663 | 35.51651 | 2.71012 |
| 2000 | 5.93277 | 5.51382 | 0.41895 | 5.65754 | 5.25803 | 0.39951 | 15.54319 | 14.44559 | 1.09760 | 11.87450 | 11.03597 | 0.83853 | 19.57203 | 18.18993 | 1.38211 | 38.22663 | 35.52720 | 2.69942 |
| 2001 | 5.93277 | 5.51560 | 0.41717 | 5.65754 | 5.25972 | 0.39782 | 15.54319 | 14.45024 | 1.09295 | 11.87450 | 11.03952 | 0.83498 | 19.57203 | 18.19579 | 1.37624 | 38.22663 | 35.53865 | 2.68798 |
| 2002 | 5.93277 | 5.51750 | 0.41527 | 5.65754 | 5.26153 | 0.39601 | 15.54319 | 14.45523 | 1.08796 | 11.87450 | 11.04333 | 0.83117 | 19.57203 | 18.20206 | 1.36997 | 38.22663 | 35.55091 | 2.67572 |
| 2003 | 5.93277 | 5.51954 | 0.41323 | 5.65754 | 5.26348 | 0.39406 | 15.54319 | 14.46056 | 1.08263 | 11.87450 | 11.04741 | 0.82709 | 19.57203 | 18.20878 | 1.36325 | 38.22663 | 35.56403 | 2.66260 |
| 2004 | 5.93277 | 5.52172 | 0.41105 | 5.65754 | 5.26556 | 0.39198 | 15.54319 | 14.46628 | 1.07691 | 11.87450 | 11.05177 | 0.82273 | 19.57203 | 18.21598 | 1.35605 | 38.22663 | 35.57809 | 2.64854 |
| 2005 | 5.93277 | 5.52405 | 0.40872 | 5.65754 | 5.26778 | 0.38976 | 15.54319 | 14.47240 | 1.07079 | 11.87450 | 11.05645 | 0.81805 | 19.57203 | 18.22369 | 1.34835 | 38.22663 | 35.59314 | 2.63349 |
| 2006 | 5.93277 | 5.52656 | 0.40622 | 5.65754 | 5.27017 | 0.38737 | 15.54319 | 14.47895 | 1.06424 | 11.87450 | 11.06146 | 0.81305 | 19.57203 | 18.23194 | 1.34009 | 38.22663 | 35.60925 | 2.61737 |
| 2007 | 5.93277 | 5.52924 | 0.40354 | 5.65754 | 5.27272 | 0.38482 | 15.54319 | 14.48597 | 1.05722 | 11.87450 | 11.06682 | 0.80768 | 19.57203 | 18.24078 | 1.33126 | 38.22663 | 35.62652 | 2.60011 |
| 2008 | 5.93277 | 5.53210 | 0.40067 | 5.65754 | 5.27546 | 0.38208 | 15.54319 | 14.49349 | 1.04970 | 11.87450 | 11.07256 | 0.80194 | 19.57203 | 18.25024 | 1.32179 | 38.22663 | 35.64501 | 2.58162 |
| 2009 | 5.93277 | 5.53518 | 0.39759 | 5.65754 | 5.27839 | 0.37915 | 15.54319 | 14.50154 | 1.04165 | 11.87450 | 11.07871 | 0.79579 | 19.57203 | 18.26038 | 1.31165 | 38.22663 | 35.66481 | 2.56182 |
| 2010 | 5.93277 | 5.53847 | 0.39430 | 5.65754 | 5.28153 | 0.37601 | 15.54319 | 14.51017 | 1.03302 | 11.87450 | 11.08530 | 0.78920 | 19.57203 | 18.27125 | 1.30079 | 38.22663 | 35.68603 | 2.54060 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.72 y A.5.17

Cuadro N° A.5.108

PROYECTO AMPLIACIÓN A 4 CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 7%. TRAMO 3

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.95289 | 1.79681 | 0.15608 | 1.86229 | 1.71345 | 0.14884 | 5.11635 | 4.70743 | 0.40892 | 3.90873 | 3.59632 | 0.31241 | 6.44253 | 5.92761 | 0.51492 | 12.58306 | 11.57736 | 1.00570 |
| 1996 | 1.96309 | 1.79730 | 0.16579 | 1.87202 | 1.71392 | 0.15810 | 5.14309 | 4.70873 | 0.43436 | 3.92915 | 3.59732 | 0.33184 | 6.47619 | 5.92924 | 0.54694 | 12.64880 | 11.58055 | 1.06825 |
| 1997 | 1.97413 | 1.79783 | 0.17630 | 1.88255 | 1.71443 | 0.16812 | 5.17200 | 4.71012 | 0.46188 | 3.95124 | 3.59838 | 0.35286 | 6.51260 | 5.93100 | 0.58160 | 12.71992 | 11.58398 | 1.13594 |
| 1998 | 1.98608 | 1.79840 | 0.18768 | 1.89394 | 1.71497 | 0.17897 | 5.20330 | 4.71161 | 0.49169 | 3.97516 | 3.59952 | 0.37564 | 6.55201 | 5.93287 | 0.61914 | 12.79690 | 11.58764 | 1.20926 |
| 1999 | 1.99902 | 1.79901 | 0.20001 | 1.90629 | 1.71555 | 0.19073 | 5.23721 | 4.71320 | 0.52401 | 4.00106 | 3.60074 | 0.40033 | 6.59472 | 5.93488 | 0.65984 | 12.88030 | 11.59156 | 1.28874 |
| 2000 | 2.01306 | 1.79966 | 0.21340 | 1.91967 | 1.71617 | 0.20350 | 5.27400 | 4.71491 | 0.55908 | 4.02916 | 3.60204 | 0.42712 | 6.64103 | 5.93703 | 0.70400 | 12.97076 | 11.59576 | 1.37500 |
| 2001 | 2.02830 | 1.80036 | 0.22794 | 1.93421 | 1.71684 | 0.21737 | 5.31393 | 4.71674 | 0.59719 | 4.05967 | 3.60344 | 0.45623 | 6.69131 | 5.93933 | 0.75198 | 13.06897 | 11.60026 | 1.46871 |
| 2002 | 2.04701 | 1.80111 | 0.24590 | 1.95205 | 1.71755 | 0.23449 | 5.36293 | 4.71870 | 0.64424 | 4.09711 | 3.60493 | 0.49218 | 6.75302 | 5.94180 | 0.81122 | 13.18950 | 11.60508 | 1.58442 |
| 2003 | 2.06772 | 1.80191 | 0.26581 | 1.97180 | 1.71831 | 0.25348 | 5.41719 | 4.72080 | 0.69640 | 4.13856 | 3.60654 | 0.53203 | 6.82135 | 5.94444 | 0.87691 | 13.32294 | 11.61023 | 1.71271 |
| 2004 | 2.09035 | 1.80277 | 0.28759 | 1.99338 | 1.71913 | 0.27424 | 5.47648 | 4.72304 | 0.75344 | 4.18386 | 3.60825 | 0.57560 | 6.89600 | 5.94727 | 0.94873 | 13.46875 | 11.61576 | 1.85300 |
| 2005 | 2.11512 | 1.80368 | 0.31144 | 2.01700 | 1.72001 | 0.29699 | 5.54137 | 4.72545 | 0.81593 | 4.23343 | 3.61009 | 0.62334 | 6.97771 | 5.95030 | 1.02742 | 13.62835 | 11.62167 | 2.00667 |
| 2006 | 2.14228 | 1.80467 | 0.33761 | 2.04290 | 1.72095 | 0.32195 | 5.61253 | 4.72802 | 0.88451 | 4.28780 | 3.61206 | 0.67574 | 7.06732 | 5.95354 | 1.11378 | 13.80336 | 11.62801 | 2.17534 |
| 2007 | 2.17213 | 1.80572 | 0.36641 | 2.07136 | 1.72195 | 0.34941 | 5.69073 | 4.73078 | 0.95994 | 4.34753 | 3.61417 | 0.73336 | 7.16578 | 5.95702 | 1.20876 | 13.99566 | 11.63480 | 2.36086 |
| 2008 | 2.20500 | 1.80685 | 0.39815 | 2.10270 | 1.72303 | 0.37968 | 5.77684 | 4.73374 | 1.04310 | 4.41332 | 3.61643 | 0.79689 | 7.27422 | 5.96074 | 1.31347 | 14.20745 | 11.64207 | 2.56538 |
| 2009 | 2.24268 | 1.80806 | 0.43462 | 2.13864 | 1.72418 | 0.41446 | 5.87557 | 4.73691 | 1.13866 | 4.48875 | 3.61885 | 0.86990 | 7.39853 | 5.96473 | 1.43380 | 14.45026 | 11.64986 | 2.80040 |
| 2010 | 2.30324 | 1.80935 | 0.49388 | 2.19639 | 1.72542 | 0.47097 | 6.03423 | 4.74030 | 1.29392 | 4.60996 | 3.62144 | 0.98851 | 7.59831 | 5.96900 | 1.62931 | 14.84046 | 11.65821 | 3.18225 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.73 y A.5.18

Cuadro N° A.5.109

PROYECTO AMPLIACIÓN A 4 CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 7%. TRAMO 4

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.23602 | 1.08139 | 0.15463 | 1.17868 | 1.03123 | 0.14745 | 3.23824 | 2.83313 | 0.40511 | 2.47391 | 2.16442 | 0.30949 | 4.07760 | 3.56748 | 0.51011 | 7.96406 | 6.96774 | 0.99632 |
| 1996 | 1.24626 | 1.08193 | 0.16434 | 1.18845 | 1.03173 | 0.15671 | 3.26506 | 2.83452 | 0.43054 | 2.49440 | 2.16548 | 0.32892 | 4.11138 | 3.56924 | 0.54214 | 8.03004 | 6.97117 | 1.05886 |
| 1997 | 1.25741 | 1.08250 | 0.17491 | 1.19907 | 1.03228 | 0.16680 | 3.29427 | 2.83602 | 0.45825 | 2.51671 | 2.16663 | 0.35009 | 4.14815 | 3.57112 | 0.57703 | 8.10185 | 6.97484 | 1.12701 |
| 1998 | 1.26956 | 1.08311 | 0.18645 | 1.21066 | 1.03286 | 0.17780 | 3.32610 | 2.83761 | 0.48848 | 2.54103 | 2.16785 | 0.37318 | 4.18823 | 3.57313 | 0.61510 | 8.18013 | 6.97878 | 1.20136 |
| 1999 | 1.28908 | 1.08376 | 0.20532 | 1.22927 | 1.03348 | 0.19579 | 3.37724 | 2.83933 | 0.53791 | 2.58010 | 2.16916 | 0.41094 | 4.25263 | 3.57529 | 0.67734 | 8.30591 | 6.98299 | 1.32292 |
| 2000 | 1.30508 | 1.08446 | 0.22062 | 1.24453 | 1.03415 | 0.21038 | 3.41915 | 2.84116 | 0.57799 | 2.61212 | 2.17056 | 0.44157 | 4.30541 | 3.57760 | 0.72781 | 8.40900 | 6.98750 | 1.42150 |
| 2001 | 1.32264 | 1.08521 | 0.23743 | 1.26128 | 1.03487 | 0.22642 | 3.46517 | 2.84313 | 0.62204 | 2.64728 | 2.17206 | 0.47522 | 4.36335 | 3.58008 | 0.78328 | 8.52218 | 6.99234 | 1.52984 |
| 2002 | 1.34197 | 1.08602 | 0.25595 | 1.27971 | 1.03563 | 0.24408 | 3.51580 | 2.84524 | 0.67057 | 2.68596 | 2.17367 | 0.51229 | 4.42711 | 3.58273 | 0.84438 | 8.64670 | 6.99752 | 1.64918 |
| 2003 | 1.36328 | 1.08688 | 0.27640 | 1.30004 | 1.03646 | 0.26358 | 3.57164 | 2.84750 | 0.72415 | 2.72862 | 2.17540 | 0.55323 | 4.49742 | 3.58557 | 0.91185 | 8.78403 | 7.00307 | 1.78095 |
| 2004 | 1.38685 | 1.08780 | 0.29905 | 1.32251 | 1.03734 | 0.28518 | 3.63339 | 2.84992 | 0.78347 | 2.77579 | 2.17724 | 0.59855 | 4.57518 | 3.58862 | 0.98655 | 8.93589 | 7.00903 | 1.92686 |
| 2005 | 1.41299 | 1.08879 | 0.32420 | 1.34744 | 1.03828 | 0.30916 | 3.70187 | 2.85251 | 0.84936 | 2.82811 | 2.17923 | 0.64888 | 4.66140 | 3.59189 | 1.06952 | 9.10430 | 7.01541 | 2.08890 |
| 2006 | 1.44207 | 1.08985 | 0.35222 | 1.37517 | 1.03929 | 0.33588 | 3.77806 | 2.85529 | 0.92277 | 2.88632 | 2.18135 | 0.70497 | 4.75734 | 3.59539 | 1.16195 | 9.29168 | 7.02225 | 2.26944 |
| 2007 | 1.47454 | 1.09099 | 0.38355 | 1.40614 | 1.04038 | 0.36576 | 3.86313 | 2.85827 | 1.00486 | 2.95131 | 2.18363 | 0.76768 | 4.86447 | 3.59914 | 1.26532 | 9.50091 | 7.02958 | 2.47133 |
| 2008 | 1.62950 | 1.09221 | 0.53729 | 1.55390 | 1.04154 | 0.51236 | 4.26910 | 2.86147 | 1.40763 | 3.26146 | 2.18607 | 1.07538 | 5.37566 | 3.60317 | 1.77249 | 10.49934 | 7.03744 | 3.46190 |
| 2009 | 1.70641 | 1.09352 | 0.61289 | 1.62725 | 1.04279 | 0.58446 | 4.47060 | 2.86490 | 1.60571 | 3.41540 | 2.18869 | 1.22671 | 5.62940 | 3.60749 | 2.02191 | 10.99492 | 7.04588 | 3.94904 |
| 2010 | 1.79718 | 1.09492 | 0.70225 | 1.71380 | 1.04413 | 0.66967 | 4.70840 | 2.86858 | 1.83983 | 3.59707 | 2.19150 | 1.40557 | 5.92883 | 3.61212 | 2.31671 | 11.57975 | 7.05492 | 4.52483 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.74 y A.5.19

Cuadro N° A.5.110

PROYECTO AMPLIACIÓN A 4 CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 7%. TRAMO 5

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 0.37864 | 0.35936 | 0.01928 | 0.36107 | 0.34269 | 0.01838 | 0.99199 | 0.94149 | 0.05050 | 0.75785 | 0.71926 | 0.03858 | 1.24912 | 1.18552 | 0.06359 | 2.43968 | 2.31547 | 0.12421 |
| 1996 | 0.38117 | 0.35946 | 0.02171 | 0.36349 | 0.34278 | 0.02071 | 0.99863 | 0.94175 | 0.05688 | 0.76292 | 0.71946 | 0.04346 | 1.25748 | 1.18585 | 0.07163 | 2.45602 | 2.31611 | 0.13990 |
| 1997 | 0.38392 | 0.35957 | 0.02436 | 0.36611 | 0.34289 | 0.02323 | 1.00584 | 0.94202 | 0.06381 | 0.76843 | 0.71968 | 0.04875 | 1.26655 | 1.18620 | 0.08035 | 2.47374 | 2.31680 | 0.15694 |
| 1998 | 0.38691 | 0.35968 | 0.02723 | 0.36896 | 0.34299 | 0.02597 | 1.01366 | 0.94232 | 0.07134 | 0.77441 | 0.71990 | 0.05450 | 1.27641 | 1.18657 | 0.08984 | 2.49299 | 2.31753 | 0.17548 |
| 1999 | 0.39016 | 0.35980 | 0.03036 | 0.37206 | 0.34311 | 0.02895 | 1.02218 | 0.94264 | 0.07953 | 0.78091 | 0.72015 | 0.06076 | 1.28713 | 1.18698 | 0.10015 | 2.51392 | 2.31831 | 0.19561 |
| 2000 | 0.39370 | 0.35993 | 0.03376 | 0.37543 | 0.34323 | 0.03220 | 1.03144 | 0.94298 | 0.08846 | 0.78799 | 0.72041 | 0.06758 | 1.29879 | 1.18741 | 0.11139 | 2.53671 | 2.31915 | 0.21755 |
| 2001 | 0.39755 | 0.36007 | 0.03748 | 0.37911 | 0.34337 | 0.03574 | 1.04154 | 0.94335 | 0.09820 | 0.79571 | 0.72069 | 0.07502 | 1.31152 | 1.18787 | 0.12365 | 2.56155 | 2.32005 | 0.24150 |
| 2002 | 0.40176 | 0.36022 | 0.04154 | 0.38313 | 0.34351 | 0.03961 | 1.05258 | 0.94374 | 0.10884 | 0.80413 | 0.72099 | 0.08315 | 1.32541 | 1.18836 | 0.13705 | 2.58868 | 2.32102 | 0.26767 |
| 2003 | 0.40633 | 0.36038 | 0.04594 | 0.38748 | 0.34366 | 0.04381 | 1.06453 | 0.94416 | 0.12037 | 0.81327 | 0.72131 | 0.09196 | 1.34046 | 1.18889 | 0.15157 | 2.61808 | 2.32205 | 0.29603 |
| 2004 | 0.41069 | 0.36055 | 0.05014 | 0.39164 | 0.34383 | 0.04782 | 1.07597 | 0.94461 | 0.13137 | 0.82201 | 0.72165 | 0.10036 | 1.35487 | 1.18945 | 0.16542 | 2.64623 | 2.32315 | 0.32308 |
| 2005 | 0.41547 | 0.36074 | 0.05474 | 0.39620 | 0.34400 | 0.05220 | 1.08850 | 0.94509 | 0.14341 | 0.83158 | 0.72202 | 0.10956 | 1.37064 | 1.19006 | 0.18058 | 2.67702 | 2.32433 | 0.35269 |
| 2006 | 0.42071 | 0.36093 | 0.05978 | 0.40120 | 0.34419 | 0.05701 | 1.10222 | 0.94560 | 0.15662 | 0.84206 | 0.72241 | 0.11965 | 1.38792 | 1.19071 | 0.19721 | 2.71078 | 2.32560 | 0.38518 |
| 2007 | 0.42647 | 0.36114 | 0.06532 | 0.40668 | 0.34439 | 0.06229 | 1.11730 | 0.94616 | 0.17114 | 0.85358 | 0.72283 | 0.13074 | 1.40690 | 1.19140 | 0.21550 | 2.74785 | 2.32696 | 0.42089 |
| 2008 | 0.43280 | 0.36137 | 0.07143 | 0.41272 | 0.34461 | 0.06812 | 1.13389 | 0.94675 | 0.18714 | 0.86625 | 0.72329 | 0.14297 | 1.42780 | 1.19215 | 0.23565 | 2.78866 | 2.32841 | 0.46025 |
| 2009 | 0.43979 | 0.36161 | 0.07818 | 0.41939 | 0.34484 | 0.07455 | 1.15220 | 0.94738 | 0.20482 | 0.88024 | 0.72377 | 0.15647 | 1.45085 | 1.19295 | 0.25791 | 2.83369 | 2.32997 | 0.50372 |
| 2010 | 0.44752 | 0.36187 | 0.08565 | 0.42676 | 0.34508 | 0.08168 | 1.17246 | 0.94806 | 0.22439 | 0.89572 | 0.72429 | 0.17143 | 1.47636 | 1.19380 | 0.28256 | 2.88351 | 2.33164 | 0.55187 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.75 y A. 5.20

Cuadro N° A.5.111
PROYECTO AMPLIACIÓN A 4 CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 10%. TRAMO 1

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 2.685 | 2.516 | 0.169 | 2.560 | 2.399 | 0.161 | 7.034 | 6.592 | 0.442 | 5.374 | 5.036 | 0.338 | 8.857 | 8.301 | 0.557 | 17.299 | 16.212 | 1.087 |
| 1996 | 2.715 | 2.517 | 0.198 | 2.589 | 2.400 | 0.189 | 7.113 | 6.595 | 0.519 | 5.434 | 5.038 | 0.396 | 8.957 | 8.304 | 0.653 | 17.494 | 16.219 | 1.275 |
| 1997 | 2.749 | 2.518 | 0.231 | 2.622 | 2.402 | 0.220 | 7.203 | 6.598 | 0.605 | 5.503 | 5.041 | 0.462 | 9.070 | 8.308 | 0.762 | 17.714 | 16.227 | 1.487 |
| 1998 | 2.788 | 2.520 | 0.268 | 2.658 | 2.403 | 0.256 | 7.304 | 6.601 | 0.702 | 5.580 | 5.043 | 0.537 | 9.197 | 8.312 | 0.884 | 17.962 | 16.235 | 1.727 |
| 1999 | 2.831 | 2.521 | 0.310 | 2.700 | 2.404 | 0.296 | 7.418 | 6.605 | 0.813 | 5.667 | 5.046 | 0.621 | 9.341 | 8.317 | 1.024 | 18.243 | 16.244 | 1.999 |
| 2000 | 2.875 | 2.523 | 0.353 | 2.742 | 2.406 | 0.336 | 7.533 | 6.609 | 0.924 | 5.755 | 5.049 | 0.706 | 9.486 | 8.322 | 1.164 | 18.526 | 16.254 | 2.272 |
| 2001 | 2.923 | 2.524 | 0.399 | 2.788 | 2.407 | 0.381 | 7.659 | 6.613 | 1.046 | 5.851 | 5.052 | 0.799 | 9.644 | 8.328 | 1.317 | 18.836 | 16.265 | 2.571 |
| 2002 | 2.978 | 2.526 | 0.452 | 2.840 | 2.409 | 0.431 | 7.803 | 6.618 | 1.184 | 5.961 | 5.056 | 0.905 | 9.825 | 8.334 | 1.491 | 19.189 | 16.277 | 2.912 |
| 2003 | 3.041 | 2.528 | 0.513 | 2.900 | 2.411 | 0.489 | 7.967 | 6.624 | 1.343 | 6.086 | 5.060 | 1.026 | 10.032 | 8.341 | 1.691 | 19.593 | 16.290 | 3.303 |
| 2004 | 3.113 | 2.531 | 0.582 | 2.969 | 2.413 | 0.555 | 8.156 | 6.630 | 1.526 | 6.231 | 5.065 | 1.166 | 10.270 | 8.348 | 1.922 | 20.058 | 16.305 | 3.753 |
| 2005 | 3.219 | 2.533 | 0.686 | 3.069 | 2.416 | 0.654 | 8.432 | 6.636 | 1.796 | 6.442 | 5.070 | 1.372 | 10.618 | 8.356 | 2.262 | 20.739 | 16.321 | 4.418 |
| 2006 | 3.353 | 2.536 | 0.817 | 3.197 | 2.418 | 0.779 | 8.783 | 6.644 | 2.140 | 6.710 | 5.075 | 1.635 | 11.060 | 8.366 | 2.694 | 21.601 | 16.339 | 5.262 |
| 2007 | 3.513 | 2.539 | 0.974 | 3.350 | 2.421 | 0.929 | 9.205 | 6.652 | 2.553 | 7.032 | 5.082 | 1.950 | 11.590 | 8.376 | 3.215 | 22.638 | 16.359 | 6.279 |
| 2008 | 3.709 | 2.542 | 1.167 | 3.537 | 2.424 | 1.113 | 9.717 | 6.660 | 3.057 | 7.424 | 5.088 | 2.335 | 12.236 | 8.387 | 3.849 | 23.898 | 16.381 | 7.517 |
| 2009 | 3.819 | 2.546 | 1.273 | 3.642 | 2.428 | 1.214 | 10.006 | 6.670 | 3.336 | 7.645 | 5.096 | 2.549 | 12.600 | 8.399 | 4.201 | 24.609 | 16.405 | 8.204 |
| 2010 | 3.897 | 2.550 | 1.347 | 3.716 | 2.432 | 1.285 | 10.210 | 6.681 | 3.529 | 7.800 | 5.104 | 2.696 | 12.857 | 8.413 | 4.444 | 25.111 | 16.431 | 8.680 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.81 y A.5.31

Cuadro N° A.5.112
PROYECTO AMPLIACIÓN A 4 CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 10%. TRAMO 2

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 5.9328 | 5.5065 | 0.4262 | 5.6575 | 5.2511 | 0.4065 | 15.5432 | 14.4265 | 1.1167 | 11.8745 | 11.0214 | 0.8531 | 19.5720 | 18.1659 | 1.4061 | 38.2266 | 35.4803 | 2.7463 |
| 1996 | 5.9714 | 5.5084 | 0.4631 | 5.6944 | 5.2528 | 0.4416 | 15.6444 | 14.4313 | 1.2132 | 11.9518 | 11.0250 | 0.9268 | 19.6995 | 18.1719 | 1.5276 | 38.4756 | 35.4920 | 2.9836 |
| 1997 | 6.0145 | 5.5103 | 0.5042 | 5.7355 | 5.2547 | 0.4808 | 15.7573 | 14.4365 | 1.3208 | 12.0381 | 11.0290 | 1.0091 | 19.8417 | 18.1784 | 1.6632 | 38.7532 | 35.5048 | 3.2484 |
| 1998 | 6.0626 | 5.5125 | 0.5501 | 5.7814 | 5.2568 | 0.5246 | 15.8834 | 14.4422 | 1.4412 | 12.1344 | 11.0334 | 1.1010 | 20.0004 | 18.1857 | 1.8148 | 39.0633 | 35.5189 | 3.5444 |
| 1999 | 6.1165 | 5.5149 | 0.6015 | 5.8327 | 5.2591 | 0.5736 | 16.0244 | 14.4485 | 1.5759 | 12.2421 | 11.0382 | 1.2040 | 20.1780 | 18.1936 | 1.9844 | 39.4102 | 35.5344 | 3.8758 |
| 2000 | 6.1768 | 5.5176 | 0.6592 | 5.8902 | 5.2616 | 0.6286 | 16.1825 | 14.4555 | 1.7270 | 12.3629 | 11.0435 | 1.3194 | 20.3770 | 18.2023 | 2.1747 | 39.7989 | 35.5515 | 4.2474 |
| 2001 | 6.2471 | 5.5205 | 0.7266 | 5.9573 | 5.2644 | 0.6929 | 16.3668 | 14.4631 | 1.9037 | 12.5037 | 11.0493 | 1.4543 | 20.6091 | 18.2120 | 2.3971 | 40.2521 | 35.5703 | 4.6818 |
| 2002 | 6.3343 | 5.5237 | 0.8105 | 6.0404 | 5.2675 | 0.7729 | 16.5951 | 14.4715 | 2.1235 | 12.6781 | 11.0558 | 1.6223 | 20.8965 | 18.2226 | 2.6740 | 40.8136 | 35.5910 | 5.2226 |
| 2003 | 6.4330 | 5.5273 | 0.9057 | 6.1345 | 5.2708 | 0.8637 | 16.8536 | 14.4808 | 2.3728 | 12.8756 | 11.0629 | 1.8128 | 21.2221 | 18.2343 | 2.9879 | 41.4495 | 35.6138 | 5.8357 |
| 2004 | 6.5451 | 5.5312 | 1.0140 | 6.2415 | 5.2746 | 0.9669 | 17.1475 | 14.4910 | 2.6565 | 13.1002 | 11.0707 | 2.0295 | 21.5922 | 18.2471 | 3.3451 | 42.1723 | 35.6389 | 6.5334 |
| 2005 | 6.6732 | 5.5355 | 1.1377 | 6.3636 | 5.2787 | 1.0849 | 17.4829 | 14.5023 | 2.9806 | 13.3564 | 11.0793 | 2.2771 | 22.0145 | 18.2613 | 3.7532 | 42.9971 | 35.6666 | 7.3305 |
| 2006 | 6.8199 | 5.5402 | 1.2797 | 6.5035 | 5.2832 | 1.2203 | 17.8673 | 14.5147 | 3.3526 | 13.6500 | 11.0887 | 2.5613 | 22.4986 | 18.2769 | 4.2216 | 43.9425 | 35.6971 | 8.2454 |
| 2007 | 7.0520 | 5.5454 | 1.5066 | 6.7249 | 5.2881 | 1.4367 | 18.4755 | 14.5283 | 3.9471 | 14.1147 | 11.0992 | 3.0155 | 23.2644 | 18.2941 | 4.9702 | 45.4382 | 35.7307 | 9.7075 |
| 2008 | 7.3543 | 5.5512 | 1.8032 | 7.0131 | 5.2936 | 1.7195 | 19.2674 | 14.5434 | 4.7241 | 14.7197 | 11.1107 | 3.6090 | 24.2616 | 18.3131 | 5.9485 | 47.3860 | 35.7677 | 11.6183 |
| 2009 | 7.7182 | 5.5575 | 2.1608 | 7.3602 | 5.2997 | 2.0605 | 20.2209 | 14.5600 | 5.6609 | 15.4481 | 11.1234 | 4.3248 | 25.4623 | 18.3340 | 7.1283 | 49.7310 | 35.8086 | 13.9224 |
| 2010 | 8.1626 | 5.5645 | 2.5981 | 7.7839 | 5.3063 | 2.4776 | 21.3850 | 14.5783 | 6.8067 | 16.3375 | 11.1374 | 5.2001 | 26.9281 | 18.3570 | 8.5711 | 52.5940 | 35.8536 | 16.7404 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.82 y A.5.32

Cuadro N° A.5.113

PROYECTO AMPLIACIÓN A 4 CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 10%. TRAMO 3

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.95289 | 1.79681 | 0.15608 | 1.86229 | 1.71345 | 0.14884 | 5.11635 | 4.70743 | 0.40892 | 3.90873 | 3.59632 | 0.31241 | 6.44253 | 5.92761 | 0.51492 | 12.5831 | 11.5774 | 1.0057 |
| 1996 | 1.96750 | 1.79751 | 0.16999 | 1.87622 | 1.71412 | 0.16210 | 5.15463 | 4.70928 | 0.44534 | 3.93797 | 3.59774 | 0.34023 | 6.49072 | 5.92995 | 0.56078 | 12.6772 | 11.5819 | 1.0953 |
| 1997 | 1.98382 | 1.79829 | 0.18553 | 1.89179 | 1.71487 | 0.17692 | 5.19740 | 4.71133 | 0.48607 | 3.97064 | 3.59930 | 0.37134 | 6.54458 | 5.93252 | 0.61206 | 12.7824 | 11.5870 | 1.1954 |
| 1998 | 2.00210 | 1.79915 | 0.20294 | 1.90922 | 1.71569 | 0.19353 | 5.24527 | 4.71358 | 0.53169 | 4.00722 | 3.60102 | 0.40619 | 6.60486 | 5.93535 | 0.66951 | 12.9001 | 11.5925 | 1.3076 |
| 1999 | 2.02259 | 1.80010 | 0.22249 | 1.92876 | 1.71659 | 0.21217 | 5.29896 | 4.71606 | 0.58290 | 4.04824 | 3.60292 | 0.44532 | 6.67246 | 5.93847 | 0.73399 | 13.0322 | 11.5986 | 1.4336 |
| 2000 | 2.04787 | 1.80114 | 0.24673 | 1.95287 | 1.71758 | 0.23529 | 5.36519 | 4.71879 | 0.64641 | 4.09884 | 3.60500 | 0.49384 | 6.75587 | 5.94191 | 0.81396 | 13.1951 | 11.6053 | 1.5898 |
| 2001 | 2.07770 | 1.80229 | 0.27541 | 1.98131 | 1.71868 | 0.26264 | 5.44335 | 4.72179 | 0.72155 | 4.15854 | 3.60730 | 0.55124 | 6.85428 | 5.94569 | 0.90858 | 13.3873 | 11.6127 | 1.7746 |
| 2002 | 2.11154 | 1.80355 | 0.30798 | 2.01358 | 1.71988 | 0.29370 | 5.53198 | 4.72510 | 0.80688 | 4.22626 | 3.60983 | 0.61643 | 6.96589 | 5.94986 | 1.01603 | 13.6053 | 11.6208 | 1.9844 |
| 2003 | 2.15005 | 1.80494 | 0.34510 | 2.05030 | 1.72121 | 0.32909 | 5.63288 | 4.72875 | 0.90413 | 4.30334 | 3.61261 | 0.69073 | 7.09294 | 5.95446 | 1.13849 | 13.8534 | 11.6298 | 2.2236 |
| 2004 | 2.19407 | 1.80648 | 0.38759 | 2.09228 | 1.72267 | 0.36961 | 5.74821 | 4.73277 | 1.01544 | 4.39145 | 3.61568 | 0.77576 | 7.23816 | 5.95951 | 1.27864 | 14.1370 | 11.6397 | 2.4974 |
| 2005 | 2.24766 | 1.80817 | 0.43949 | 2.14339 | 1.72428 | 0.41910 | 5.88861 | 4.73720 | 1.15142 | 4.49871 | 3.61907 | 0.87965 | 7.41496 | 5.96509 | 1.44987 | 14.4823 | 11.6506 | 2.8318 |
| 2006 | 2.33612 | 1.81003 | 0.52609 | 2.22774 | 1.72606 | 0.50168 | 6.12037 | 4.74208 | 1.37830 | 4.67577 | 3.62279 | 1.05298 | 7.70679 | 5.97124 | 1.73556 | 15.0523 | 11.6626 | 3.3898 |
| 2007 | 2.44184 | 1.81208 | 0.62975 | 2.32855 | 1.72802 | 0.60054 | 6.39733 | 4.74746 | 1.64988 | 4.88736 | 3.62690 | 1.26045 | 8.05554 | 5.97801 | 2.07753 | 15.7335 | 11.6758 | 4.0577 |
| 2008 | 2.56975 | 1.81435 | 0.75540 | 2.45053 | 1.73018 | 0.72036 | 6.73245 | 4.75339 | 1.97907 | 5.14338 | 3.63144 | 1.51194 | 8.47752 | 5.98548 | 2.49205 | 16.5577 | 11.6904 | 4.8673 |
| 2009 | 2.72688 | 1.81685 | 0.91004 | 2.60038 | 1.73256 | 0.86782 | 7.14412 | 4.75993 | 2.38419 | 5.45788 | 3.63643 | 1.82145 | 8.99590 | 5.99372 | 3.00218 | 17.5701 | 11.7065 | 5.8636 |
| 2010 | 2.72813 | 1.81960 | 0.90852 | 2.60156 | 1.73519 | 0.86638 | 7.14738 | 4.76715 | 2.38023 | 5.46037 | 3.64195 | 1.81842 | 9.00000 | 6.00280 | 2.99720 | 17.5781 | 11.7242 | 5.8539 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.83 y A.5.33

Cuadro N° A.5.114

PROYECTO AMPLIACIÓN A 4. CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 10%. TRAMO 4

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.19398 | 1.08139 | 0.11258 | 1.13859 | 1.03123 | 0.10736 | 3.12809 | 2.83313 | 0.29496 | 2.38976 | 2.16442 | 0.22534 | 3.93890 | 3.56748 | 0.37141 | 7.6932 | 6.9677 | 0.7254 |
| 1996 | 1.20353 | 1.08215 | 0.12138 | 1.14770 | 1.03195 | 0.11575 | 3.15311 | 2.83512 | 0.31799 | 2.40888 | 2.16594 | 0.24294 | 3.97041 | 3.56999 | 0.40042 | 7.7547 | 6.9726 | 0.7821 |
| 1997 | 1.21422 | 1.08299 | 0.13122 | 1.15789 | 1.03275 | 0.12514 | 3.18111 | 2.83731 | 0.34379 | 2.43026 | 2.16762 | 0.26265 | 4.00566 | 3.57275 | 0.43291 | 7.8236 | 6.9780 | 0.8455 |
| 1998 | 1.22693 | 1.08391 | 0.14302 | 1.17001 | 1.03363 | 0.13638 | 3.21443 | 2.83973 | 0.37469 | 2.45572 | 2.16946 | 0.28625 | 4.04761 | 3.57580 | 0.47182 | 7.9055 | 6.9840 | 0.9215 |
| 1999 | 1.24164 | 1.08493 | 0.15671 | 1.18404 | 1.03460 | 0.14944 | 3.25297 | 2.84240 | 0.41057 | 2.48516 | 2.17150 | 0.31366 | 4.09615 | 3.57915 | 0.51699 | 8.0003 | 6.9905 | 1.0098 |
| 2000 | 1.25824 | 1.08605 | 0.17219 | 1.19987 | 1.03567 | 0.16420 | 3.29644 | 2.84533 | 0.45111 | 2.51838 | 2.17374 | 0.34464 | 4.15089 | 3.58285 | 0.56804 | 8.1072 | 6.9978 | 1.1095 |
| 2001 | 1.27701 | 1.08729 | 0.18973 | 1.21777 | 1.03685 | 0.18093 | 3.34563 | 2.84857 | 0.49706 | 2.55596 | 2.17622 | 0.37974 | 4.21283 | 3.58693 | 0.62590 | 8.2282 | 7.0057 | 1.2225 |
| 2002 | 1.29832 | 1.08865 | 0.20967 | 1.23809 | 1.03814 | 0.19995 | 3.40146 | 2.85214 | 0.54932 | 2.59861 | 2.17894 | 0.41967 | 4.28313 | 3.59142 | 0.69171 | 8.3655 | 7.0145 | 1.3510 |
| 2003 | 1.32260 | 1.09015 | 0.23245 | 1.26124 | 1.03958 | 0.22167 | 3.46507 | 2.85607 | 0.60899 | 2.64720 | 2.18195 | 0.46525 | 4.36322 | 3.59638 | 0.76685 | 8.5219 | 7.0242 | 1.4977 |
| 2004 | 1.35467 | 1.09181 | 0.26286 | 1.29182 | 1.04116 | 0.25066 | 3.54907 | 2.86042 | 0.68865 | 2.71138 | 2.18527 | 0.52611 | 4.46900 | 3.60184 | 0.86715 | 8.7285 | 7.0349 | 1.6937 |
| 2005 | 1.40622 | 1.09364 | 0.31259 | 1.34099 | 1.04290 | 0.29808 | 3.68415 | 2.86521 | 0.81894 | 2.81457 | 2.18893 | 0.62564 | 4.63909 | 3.60788 | 1.03121 | 9.0607 | 7.0466 | 2.0141 |
| 2006 | 1.46767 | 1.09566 | 0.37201 | 1.39958 | 1.04483 | 0.35475 | 3.84513 | 2.87050 | 0.97463 | 2.93755 | 2.19297 | 0.74458 | 4.84179 | 3.61454 | 1.22725 | 9.4566 | 7.0596 | 2.3970 |
| 2007 | 1.54177 | 1.09789 | 0.44389 | 1.47025 | 1.04695 | 0.42329 | 4.03927 | 2.87634 | 1.16293 | 3.08587 | 2.19743 | 0.88844 | 5.08626 | 3.62189 | 1.46437 | 9.9341 | 7.0740 | 2.8601 |
| 2008 | 1.63244 | 1.10035 | 0.53209 | 1.55671 | 1.04930 | 0.50741 | 4.27681 | 2.88279 | 1.39401 | 3.26734 | 2.20236 | 1.06498 | 5.38537 | 3.63002 | 1.75535 | 10.5183 | 7.0899 | 3.4284 |
| 2009 | 1.63688 | 1.10307 | 0.53380 | 1.56094 | 1.05190 | 0.50904 | 4.28843 | 2.88992 | 1.39850 | 3.27622 | 2.20781 | 1.06841 | 5.40000 | 3.63900 | 1.76100 | 10.5469 | 7.1074 | 3.4395 |
| 2010 | 1.63688 | 1.10608 | 0.53079 | 1.56094 | 1.05477 | 0.50617 | 4.28843 | 2.89781 | 1.39062 | 3.27622 | 2.21383 | 1.06239 | 5.40000 | 3.64893 | 1.75107 | 10.5469 | 7.1268 | 3.4201 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.84 y A.5.34

Cuadro N° A.5.115

PROYECTO AMPLIACIÓN A 4 CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 10%. TRAMO 5

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 0.37864 | 0.35936 | 0.01928 | 0.36107 | 0.34269 | 0.01838 | 0.99199 | 0.94149 | 0.05050 | 0.75785 | 0.71926 | 0.03858 | 1.24912 | 1.18552 | 0.06359 | 2.4397 | 2.3155 | 0.1242 |
| 1996 | 0.38227 | 0.35950 | 0.02277 | 0.36454 | 0.34282 | 0.02171 | 1.00151 | 0.94186 | 0.05965 | 0.76512 | 0.71955 | 0.04557 | 1.26110 | 1.18599 | 0.07511 | 2.4631 | 2.3164 | 0.1467 |
| 1997 | 0.38635 | 0.35966 | 0.02669 | 0.36842 | 0.34297 | 0.02545 | 1.01219 | 0.94227 | 0.06992 | 0.77328 | 0.71986 | 0.05342 | 1.27455 | 1.18650 | 0.08804 | 2.4894 | 2.3174 | 0.1720 |
| 1998 | 0.39093 | 0.35983 | 0.03110 | 0.37280 | 0.34314 | 0.02966 | 1.02420 | 0.94272 | 0.08149 | 0.78246 | 0.72020 | 0.06225 | 1.28968 | 1.18707 | 0.10261 | 2.5189 | 2.3185 | 0.2004 |
| 1999 | 0.39611 | 0.36002 | 0.03609 | 0.37773 | 0.34332 | 0.03441 | 1.03775 | 0.94321 | 0.09454 | 0.79281 | 0.72058 | 0.07223 | 1.30674 | 1.18769 | 0.11905 | 2.5522 | 2.3197 | 0.2325 |
| 2000 | 0.40196 | 0.36023 | 0.04173 | 0.38331 | 0.34352 | 0.03979 | 1.05308 | 0.94376 | 0.10932 | 0.80452 | 0.72100 | 0.08352 | 1.32604 | 1.18838 | 0.13766 | 2.5899 | 2.3211 | 0.2689 |
| 2001 | 0.40825 | 0.36046 | 0.04780 | 0.38931 | 0.34374 | 0.04558 | 1.06958 | 0.94436 | 0.12522 | 0.81712 | 0.72146 | 0.09566 | 1.34682 | 1.18914 | 0.15768 | 2.6305 | 2.3225 | 0.3080 |
| 2002 | 0.41478 | 0.36071 | 0.05407 | 0.39554 | 0.34398 | 0.05156 | 1.08668 | 0.94502 | 0.14166 | 0.83019 | 0.72197 | 0.10823 | 1.36836 | 1.18997 | 0.17838 | 2.6726 | 2.3242 | 0.3484 |
| 2003 | 0.42221 | 0.36099 | 0.06122 | 0.40262 | 0.34424 | 0.05838 | 1.10614 | 0.94575 | 0.16039 | 0.84506 | 0.72252 | 0.12254 | 1.39286 | 1.19089 | 0.20197 | 2.7204 | 2.3260 | 0.3945 |
| 2004 | 0.43070 | 0.36130 | 0.06940 | 0.41071 | 0.34453 | 0.06618 | 1.12837 | 0.94655 | 0.18182 | 0.86204 | 0.72314 | 0.13890 | 1.42085 | 1.19190 | 0.22895 | 2.7751 | 2.3279 | 0.4472 |
| 2005 | 0.44043 | 0.36163 | 0.07880 | 0.42000 | 0.34486 | 0.07514 | 1.15388 | 0.94744 | 0.20644 | 0.88153 | 0.72381 | 0.15771 | 1.45297 | 1.19302 | 0.25995 | 2.8378 | 2.3301 | 0.5077 |
| 2006 | 0.45304 | 0.36201 | 0.09104 | 0.43202 | 0.34521 | 0.08681 | 1.18692 | 0.94842 | 0.23850 | 0.90677 | 0.72456 | 0.18221 | 1.49457 | 1.19425 | 0.30033 | 2.9191 | 2.3325 | 0.5866 |
| 2007 | 0.47085 | 0.36242 | 0.10843 | 0.44900 | 0.34560 | 0.10340 | 1.23356 | 0.94949 | 0.28407 | 0.94240 | 0.72538 | 0.21702 | 1.55331 | 1.19560 | 0.35771 | 3.0338 | 2.3352 | 0.6986 |
| 2008 | 0.49212 | 0.36287 | 0.12925 | 0.46929 | 0.34604 | 0.12325 | 1.28930 | 0.95068 | 0.33862 | 0.98498 | 0.72629 | 0.25870 | 1.62349 | 1.19710 | 0.42639 | 3.1709 | 2.3381 | 0.8328 |
| 2009 | 0.51786 | 0.36337 | 0.15449 | 0.49383 | 0.34651 | 0.14732 | 1.35673 | 0.95199 | 0.40475 | 1.03650 | 0.72729 | 0.30921 | 1.70840 | 1.19874 | 0.50966 | 3.3367 | 2.3413 | 0.9954 |
| 2010 | 0.54947 | 0.36392 | 0.18555 | 0.52398 | 0.34704 | 0.17694 | 1.43955 | 0.95343 | 0.48612 | 1.09977 | 0.72839 | 0.37138 | 1.81268 | 1.20056 | 0.61212 | 3.5404 | 2.3448 | 1.1956 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.85 y A. 5.35

Cuadro N° A.5.116

PROYECTO AMPLIACIÓN A 4 CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 15%. TRAMO 1

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 2.68486 | 2.51615 | 0.16872 | 2.5603 | 2.3994 | 0.16089 | 7.0340 | 6.5920 | 0.44202 | 5.3738 | 5.0361 | 0.33769 | 8.8573 | 8.3007 | 0.55660 | 17.2994 | 16.2123 | 1.08710 |
| 1996 | 2.73053 | 2.51773 | 0.21280 | 2.6039 | 2.4009 | 0.20293 | 7.1537 | 6.5962 | 0.55751 | 5.4652 | 5.0393 | 0.42592 | 9.0079 | 8.3059 | 0.70202 | 17.5936 | 16.2225 | 1.37112 |
| 1997 | 2.78500 | 2.51955 | 0.26545 | 2.6558 | 2.4027 | 0.25313 | 7.2964 | 6.6009 | 0.69544 | 5.5742 | 5.0429 | 0.53129 | 9.1876 | 8.3119 | 0.87570 | 17.9446 | 16.2342 | 1.71035 |
| 1998 | 2.84922 | 2.52165 | 0.32757 | 2.7170 | 2.4047 | 0.31238 | 7.4646 | 6.6064 | 0.85820 | 5.7027 | 5.0471 | 0.65564 | 9.3995 | 8.3188 | 1.08065 | 18.3584 | 16.2477 | 2.11065 |
| 1999 | 2.91658 | 2.52407 | 0.39251 | 2.7813 | 2.4070 | 0.37430 | 7.6411 | 6.6128 | 1.02833 | 5.8376 | 5.0519 | 0.78561 | 9.6217 | 8.3268 | 1.29487 | 18.7924 | 16.2633 | 2.52905 |
| 2000 | 2.99808 | 2.52685 | 0.47123 | 2.8590 | 2.4096 | 0.44936 | 7.8546 | 6.6201 | 1.23456 | 6.0007 | 5.0575 | 0.94316 | 9.8906 | 8.3360 | 1.55456 | 19.3175 | 16.2813 | 3.03624 |
| 2001 | 3.09763 | 2.53006 | 0.56756 | 2.9539 | 2.4127 | 0.54123 | 8.1154 | 6.6285 | 1.48694 | 6.1999 | 5.0639 | 1.13598 | 10.2190 | 8.3466 | 1.87236 | 19.9589 | 16.3020 | 3.65696 |
| 2002 | 3.25182 | 2.53377 | 0.71805 | 3.1010 | 2.4162 | 0.68474 | 8.5194 | 6.6382 | 1.88121 | 6.5085 | 5.0714 | 1.43719 | 10.7277 | 8.3588 | 2.36883 | 20.9524 | 16.3258 | 4.62662 |
| 2003 | 3.46707 | 2.53804 | 0.92903 | 3.3062 | 2.4203 | 0.88593 | 9.0833 | 6.6494 | 2.43395 | 6.9394 | 5.0799 | 1.85946 | 11.4378 | 8.3729 | 3.06484 | 22.3394 | 16.3534 | 5.98601 |
| 2004 | 3.75274 | 2.54297 | 1.20977 | 3.5786 | 2.4250 | 1.15364 | 9.8317 | 6.6623 | 3.16945 | 7.5111 | 5.0898 | 2.42136 | 12.3802 | 8.3892 | 3.99098 | 24.1800 | 16.3851 | 7.79488 |
| 2005 | 4.00416 | 2.54867 | 1.45549 | 3.8184 | 2.4304 | 1.38797 | 10.4904 | 6.6772 | 3.81322 | 8.0144 | 5.1012 | 2.91318 | 13.2096 | 8.4080 | 4.80162 | 25.8000 | 16.4218 | 9.37817 |
| 2006 | 4.29720 | 2.55525 | 1.74195 | 4.0978 | 2.4367 | 1.66114 | 11.2582 | 6.6945 | 4.56372 | 8.6009 | 5.1144 | 3.48654 | 14.1763 | 8.4297 | 5.74666 | 27.6882 | 16.4642 | 11.22394 |
| 2007 | 4.69210 | 2.56286 | 2.12925 | 4.4744 | 2.4440 | 2.03047 | 12.2928 | 6.7144 | 5.57838 | 9.3913 | 5.1296 | 4.26171 | 15.4791 | 8.4548 | 7.02431 | 30.2326 | 16.5132 | 13.71936 |
| 2008 | 5.24657 | 2.57166 | 2.67490 | 5.0032 | 2.4524 | 2.55081 | 13.7454 | 6.7375 | 7.00794 | 10.5011 | 5.1472 | 5.35384 | 17.3083 | 8.4838 | 8.82442 | 33.8052 | 16.5700 | 17.23520 |
| 2009 | 6.07168 | 2.58187 | 3.48981 | 5.7900 | 2.4621 | 3.32791 | 15.9071 | 6.7642 | 9.14292 | 12.1525 | 5.1676 | 6.98489 | 20.0303 | 8.5175 | 11.51279 | 39.1216 | 16.6357 | 22.48591 |
| 2010 | 7.41224 | 2.59370 | 4.81854 | 7.0684 | 2.4734 | 4.59500 | 19.4192 | 6.7952 | 12.62402 | 14.8357 | 5.1913 | 9.64435 | 24.4527 | 8.5665 | 15.89620 | 47.7593 | 16.7120 | 31.04727 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.91 y A.5.46

Cuadro N° A.5.117

**PROYECTO AMPLIACIÓN A 4 CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 15%. TRAMO 2**

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 5.9328 | 5.5065 | 0.4262 | 5.6575 | 5.2511 | 0.4065 | 15.5432 | 14.4265 | 1.1167 | 11.8745 | 11.0214 | 0.8531 | 19.5720 | 18.1659 | 1.4061 | 38.2266 | 35.4803 | 2.7463 |
| 1996 | 5.9909 | 5.5093 | 0.4817 | 5.7130 | 5.2537 | 0.4593 | 15.6955 | 14.4336 | 1.2619 | 11.9909 | 11.0268 | 0.9641 | 19.7639 | 18.1749 | 1.5890 | 38.6013 | 35.4978 | 3.1035 |
| 1997 | 6.0592 | 5.5124 | 0.5468 | 5.7781 | 5.2566 | 0.5215 | 15.8745 | 14.4418 | 1.4327 | 12.1276 | 11.0331 | 1.0945 | 19.9892 | 18.1852 | 1.8040 | 39.0414 | 35.5179 | 3.5235 |
| 1998 | 6.1397 | 5.5160 | 0.6237 | 5.8549 | 5.2601 | 0.5948 | 16.0853 | 14.4512 | 1.6341 | 12.2887 | 11.0403 | 1.2484 | 20.2547 | 18.1970 | 2.0577 | 39.5600 | 35.5410 | 4.0190 |
| 1999 | 6.1614 | 5.5201 | 0.6413 | 5.8756 | 5.2640 | 0.6116 | 16.1423 | 14.4620 | 1.6802 | 12.3322 | 11.0485 | 1.2836 | 20.3264 | 18.2106 | 2.1157 | 39.6999 | 35.5676 | 4.1323 |
| 2000 | 6.2427 | 5.5249 | 0.7178 | 5.9531 | 5.2685 | 0.6845 | 16.3551 | 14.4745 | 1.8806 | 12.4947 | 11.0581 | 1.4367 | 20.5943 | 18.2263 | 2.3680 | 40.2233 | 35.5983 | 4.6250 |
| 2001 | 6.3468 | 5.5303 | 0.8165 | 6.0524 | 5.2738 | 0.7786 | 16.6279 | 14.4889 | 2.1391 | 12.7032 | 11.0690 | 1.6342 | 20.9379 | 18.2444 | 2.6935 | 40.8944 | 35.6337 | 5.2607 |
| 2002 | 6.4677 | 5.5367 | 0.9310 | 6.1676 | 5.2798 | 0.8878 | 16.9445 | 14.5054 | 2.4391 | 12.9451 | 11.0817 | 1.8634 | 21.3366 | 18.2653 | 3.0713 | 41.6731 | 35.6744 | 5.9987 |
| 2003 | 6.6086 | 5.5440 | 1.0646 | 6.3020 | 5.2868 | 1.0153 | 17.3138 | 14.5245 | 2.7892 | 13.2272 | 11.0963 | 2.1309 | 21.8016 | 18.2893 | 3.5122 | 42.5812 | 35.7213 | 6.8598 |
| 2004 | 6.7739 | 5.5524 | 1.2216 | 6.4597 | 5.2948 | 1.1649 | 17.7469 | 14.5465 | 3.2003 | 13.5581 | 11.1131 | 2.4450 | 22.3469 | 18.3171 | 4.0299 | 43.6464 | 35.7755 | 7.8709 |
| 2005 | 7.0220 | 5.5621 | 1.4600 | 6.6963 | 5.3040 | 1.3923 | 18.3970 | 14.5720 | 3.8250 | 14.0547 | 11.1325 | 2.9222 | 23.1655 | 18.3490 | 4.8165 | 45.2451 | 35.8380 | 9.4071 |
| 2006 | 7.3808 | 5.5732 | 1.8075 | 7.0384 | 5.3147 | 1.7237 | 19.3369 | 14.6013 | 4.7356 | 14.7727 | 11.1549 | 3.6178 | 24.3490 | 18.3860 | 5.9630 | 47.5567 | 35.9101 | 11.6466 |
| 2007 | 7.8288 | 5.5862 | 2.2426 | 7.4656 | 5.3270 | 2.1385 | 20.5105 | 14.6351 | 5.8753 | 15.6693 | 11.1808 | 4.4886 | 25.8268 | 18.4286 | 7.3982 | 50.4430 | 35.9934 | 14.4496 |
| 2008 | 8.3663 | 5.6011 | 2.7651 | 7.9781 | 5.3413 | 2.6369 | 21.9186 | 14.6743 | 7.2443 | 16.7451 | 11.2107 | 5.5344 | 27.6000 | 18.4779 | 9.1221 | 53.9063 | 36.0897 | 17.8166 |
| 2009 | 9.1469 | 5.6184 | 3.5285 | 8.7226 | 5.3578 | 3.3648 | 23.9639 | 14.7196 | 9.2443 | 18.3077 | 11.2453 | 7.0624 | 30.1754 | 18.5349 | 11.6405 | 58.9364 | 36.2010 | 22.7353 |
| 2010 | 10.1590 | 5.6384 | 4.5206 | 9.6877 | 5.3768 | 4.3109 | 26.6155 | 14.7720 | 11.8435 | 20.3334 | 11.2853 | 9.0481 | 33.5144 | 18.6009 | 14.9134 | 65.4577 | 36.3299 | 29.1278 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.92 y A.5.47

Cuadro N° A.5.118

PROYECTO AMPLIACIÓN A 4 CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 15%. TRAMO 3

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.95289 | 1.79681 | 0.15608 | 1.86229 | 1.71345 | 0.14884 | 5.11635 | 4.70743 | 0.40892 | 3.90873 | 3.59632 | 0.31241 | 6.44253 | 5.92761 | 0.51492 | 12.5831 | 11.5774 | 1.0057 |
| 1996 | 1.97489 | 1.79787 | 0.17702 | 1.88327 | 1.74446 | 0.16881 | 5.17398 | 4.71021 | 0.46377 | 3.95276 | 3.59845 | 0.35430 | 6.51509 | 5.93111 | 0.58398 | 12.7248 | 11.5842 | 1.1406 |
| 1997 | 2.00080 | 1.79909 | 0.20171 | 1.90798 | 1.71563 | 0.19235 | 5.24188 | 4.71342 | 0.52846 | 4.00463 | 3.60090 | 0.40372 | 6.60059 | 5.93555 | 0.66543 | 12.8918 | 11.5921 | 1.2997 |
| 1998 | 2.03164 | 1.80050 | 0.23114 | 1.93739 | 1.71698 | 0.22041 | 5.32266 | 4.71712 | 0.60555 | 4.06634 | 3.60373 | 0.46262 | 6.70231 | 5.93981 | 0.76251 | 13.0905 | 11.6012 | 1.4893 |
| 1999 | 2.07347 | 1.80213 | 0.27134 | 1.97728 | 1.71852 | 0.25876 | 5.43226 | 4.72137 | 0.71089 | 4.15008 | 3.60698 | 0.54310 | 6.84032 | 5.94516 | 0.89516 | 13.3600 | 11.6116 | 1.7484 |
| 2000 | 2.12376 | 1.80400 | 0.31976 | 2.02524 | 1.72031 | 0.30493 | 5.56402 | 4.72627 | 0.83775 | 4.25073 | 3.61072 | 0.64001 | 7.00623 | 5.95134 | 1.05489 | 13.6840 | 11.6237 | 2.0603 |
| 2001 | 2.18470 | 1.80616 | 0.37854 | 2.08335 | 1.72237 | 0.36098 | 5.72367 | 4.73193 | 0.99174 | 4.37270 | 3.61504 | 0.75766 | 7.20726 | 5.95845 | 1.24881 | 14.0767 | 11.6376 | 2.4391 |
| 2002 | 2.26962 | 1.80864 | 0.46098 | 2.16433 | 1.72474 | 0.43959 | 5.94615 | 4.73844 | 1.20771 | 4.54267 | 3.62002 | 0.92265 | 7.48741 | 5.96666 | 1.52075 | 14.6238 | 11.6536 | 2.9702 |
| 2003 | 2.41146 | 1.81151 | 0.59995 | 2.29959 | 1.72747 | 0.57212 | 6.31776 | 4.74596 | 1.57181 | 4.82657 | 3.62576 | 1.20081 | 7.95535 | 5.97612 | 1.97923 | 15.5378 | 11.6721 | 3.8657 |
| 2004 | 2.59820 | 1.81482 | 0.78338 | 2.47767 | 1.73063 | 0.74704 | 6.80699 | 4.75463 | 2.05236 | 5.20032 | 3.63238 | 1.56794 | 8.57138 | 5.98704 | 2.58434 | 16.7410 | 11.6934 | 5.0475 |
| 2005 | 2.78884 | 1.81864 | 0.97019 | 2.65946 | 1.73427 | 0.92518 | 7.30644 | 4.76464 | 2.54180 | 5.58189 | 3.64003 | 1.94185 | 9.20029 | 5.99965 | 3.20064 | 17.9693 | 11.7181 | 6.2512 |
| 2006 | 2.95119 | 1.82306 | 1.12813 | 2.81428 | 1.73848 | 1.07579 | 7.73178 | 4.77621 | 2.95557 | 5.90683 | 3.64887 | 2.25796 | 9.73588 | 6.01421 | 3.72167 | 19.0154 | 11.7465 | 7.2689 |
| 2007 | 3.16294 | 1.82816 | 1.33477 | 3.01620 | 1.74335 | 1.27285 | 8.28654 | 4.78958 | 3.49696 | 6.33065 | 3.65908 | 2.67156 | 10.43443 | 6.03105 | 4.40338 | 20.3797 | 11.7794 | 8.6004 |
| 2008 | 3.44739 | 1.83407 | 1.61332 | 3.28746 | 1.74898 | 1.53848 | 9.03177 | 4.80505 | 4.22672 | 6.89999 | 3.67090 | 3.22908 | 11.37283 | 6.05053 | 5.32230 | 22.2126 | 11.8174 | 10.3951 |
| 2009 | 3.84506 | 1.84090 | 2.00415 | 3.66668 | 1.75550 | 1.91118 | 10.07362 | 4.82296 | 5.25066 | 7.69592 | 3.68459 | 4.01134 | 12.68473 | 6.07309 | 6.61164 | 24.7749 | 11.8615 | 12.9134 |
| 2010 | 4.43315 | 1.84883 | 2.58431 | 4.22748 | 1.76306 | 2.46442 | 11.61434 | 4.84373 | 6.77061 | 8.87298 | 3.70045 | 5.17253 | 14.62481 | 6.09924 | 8.52557 | 28.5641 | 11.9126 | 16.6515 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.93 y A.5.48

Cuadro N° A.5.119

PROYECTO AMPLIACIÓN A 4° CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 15%. TRAMO 4

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 1.19398 | 1.08139 | 0.11258 | 1.13859 | 1.03123 | 0.10736 | 3.12809 | 2.83313 | 0.29496 | 2.38976 | 2.16442 | 0.22534 | 3.93890 | 3.56748 | 0.37141 | 7.6932 | 6.9677 | 0.7254 |
| 1996 | 1.20836 | 1.08253 | 0.12583 | 1.15231 | 1.03231 | 0.11999 | 3.16578 | 2.83612 | 0.32966 | 2.41855 | 2.16670 | 0.25185 | 3.98636 | 3.57125 | 0.41511 | 7.7859 | 6.9751 | 0.8108 |
| 1997 | 1.22601 | 1.08385 | 0.14216 | 1.16913 | 1.03357 | 0.13556 | 3.21200 | 2.83956 | 0.37243 | 2.45386 | 2.16933 | 0.28453 | 4.04455 | 3.57558 | 0.46897 | 7.8995 | 6.9836 | 0.9160 |
| 1998 | 1.24803 | 1.08537 | 0.16266 | 1.19013 | 1.03501 | 0.15512 | 3.26969 | 2.84353 | 0.42616 | 2.49794 | 2.17237 | 0.32557 | 4.11720 | 3.58059 | 0.53662 | 8.0414 | 6.9933 | 1.0481 |
| 1999 | 1.27435 | 1.08711 | 0.18724 | 1.21523 | 1.03668 | 0.17855 | 3.33866 | 2.84812 | 0.49054 | 2.55063 | 2.17587 | 0.37476 | 4.20404 | 3.58635 | 0.61769 | 8.2110 | 7.0046 | 1.2064 |
| 2000 | 1.30603 | 1.08913 | 0.21690 | 1.24544 | 1.03860 | 0.20684 | 3.42165 | 2.85340 | 0.56825 | 2.61403 | 2.17991 | 0.43412 | 4.30855 | 3.59301 | 0.71554 | 8.4151 | 7.0176 | 1.3975 |
| 2001 | 1.34528 | 1.09146 | 0.25381 | 1.28287 | 1.04083 | 0.24204 | 3.52447 | 2.85951 | 0.66496 | 2.69258 | 2.18457 | 0.50801 | 4.43802 | 3.60070 | 0.83733 | 8.6680 | 7.0326 | 1.6354 |
| 2002 | 1.42143 | 1.09415 | 0.32728 | 1.35549 | 1.04339 | 0.31209 | 3.72398 | 2.86656 | 0.85743 | 2.84501 | 2.18996 | 0.65505 | 4.68925 | 3.60958 | 1.07967 | 9.1587 | 7.0500 | 2.1087 |
| 2003 | 1.52041 | 1.09727 | 0.42314 | 1.44987 | 1.04636 | 0.40351 | 3.98330 | 2.87471 | 1.10859 | 3.04311 | 2.19619 | 0.84692 | 5.01578 | 3.61984 | 1.39593 | 9.7964 | 7.0700 | 2.7264 |
| 2004 | 1.64377 | 1.10087 | 0.54291 | 1.56751 | 1.04979 | 0.51772 | 4.30649 | 2.88414 | 1.42235 | 3.29002 | 2.20339 | 1.08663 | 5.42275 | 3.63172 | 1.79103 | 10.5913 | 7.0932 | 3.4981 |
| 2005 | 1.71847 | 1.10504 | 0.61343 | 1.63875 | 1.05377 | 0.58497 | 4.50220 | 2.89507 | 1.60713 | 3.43953 | 2.21174 | 1.22779 | 5.66918 | 3.64548 | 2.02370 | 11.0726 | 7.1201 | 3.9525 |
| 2006 | 1.81323 | 1.10987 | 0.70336 | 1.72911 | 1.05838 | 0.67073 | 4.75045 | 2.90774 | 1.84272 | 3.62919 | 2.22142 | 1.40778 | 5.98178 | 3.66143 | 2.32035 | 11.6832 | 7.1512 | 4.5319 |
| 2007 | 1.93599 | 1.11548 | 0.82051 | 1.84618 | 1.06373 | 0.78245 | 5.07209 | 2.92244 | 2.14965 | 3.87491 | 2.23265 | 1.64226 | 6.38679 | 3.67995 | 2.70684 | 12.4742 | 7.1874 | 5.2868 |
| 2008 | 2.09946 | 1.12201 | 0.97745 | 2.00206 | 1.06996 | 0.93211 | 5.50035 | 2.93954 | 2.56082 | 4.20210 | 2.24571 | 1.95638 | 6.92606 | 3.70147 | 3.22459 | 13.5275 | 7.2294 | 6.2980 |
| 2009 | 2.32525 | 1.12961 | 1.19564 | 2.21738 | 1.07720 | 1.14017 | 6.09189 | 2.95944 | 3.13244 | 4.65401 | 2.26092 | 2.39309 | 7.67092 | 3.72654 | 3.94438 | 14.9823 | 7.2784 | 7.7039 |
| 2010 | 2.65341 | 1.13847 | 1.51494 | 2.53032 | 1.08566 | 1.44466 | 6.95164 | 2.98268 | 3.96896 | 5.31083 | 2.27867 | 3.03216 | 8.75352 | 3.75579 | 4.99773 | 17.0967 | 7.3355 | 9.7612 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.94 y A.5.49

Cuadro N°A.5.120

PROYECTO AMPLIACIÓN A 4 CARRILES VS SITUACIÓN OPTIMIZADA.
AHORRO DE TIEMPO POR VEHÍCULO CON UNA TASA DE CRECIMIENTO VEHICULAR DEL 15%. TRAMO 5

| Año | Autos | | | Camionetas | | | Camiones 2 E | | | Camiones +2 E | | | Autobuses Chofer | | | Autobuses Pasajeros | | |
|------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------|--------------------------------------|
| | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P | Total \$/vehículo S/P | Total \$/vehículo C/P | Ahorro en valor tiempo S/P-C/P |
| 1995 | 0.37864 | 0.35936 | 0.01928 | 0.36107 | 0.34269 | 0.01838 | 0.99199 | 0.94149 | 0.05050 | 0.75785 | 0.71926 | 0.03858 | 1.24912 | 1.18552 | 0.06359 | 2.4397 | 2.3155 | 0.1242 |
| 1996 | 0.38411 | 0.35957 | 0.02454 | 0.36629 | 0.34289 | 0.02340 | 1.00633 | 0.94204 | 0.06429 | 0.76881 | 0.71969 | 0.04912 | 1.26718 | 1.18622 | 0.08095 | 2.4750 | 2.3168 | 0.1581 |
| 1997 | 0.39061 | 0.35982 | 0.03079 | 0.37249 | 0.34313 | 0.02936 | 1.02335 | 0.94268 | 0.08066 | 0.78181 | 0.72018 | 0.06162 | 1.28860 | 1.18703 | 0.10157 | 2.5168 | 2.3184 | 0.1984 |
| 1998 | 0.39835 | 0.36010 | 0.03825 | 0.37987 | 0.34340 | 0.03648 | 1.04364 | 0.94342 | 0.10022 | 0.79731 | 0.72075 | 0.07656 | 1.31416 | 1.18796 | 0.12620 | 2.5667 | 2.3202 | 0.2465 |
| 1999 | 0.40744 | 0.36043 | 0.04701 | 0.38854 | 0.34370 | 0.04483 | 1.06744 | 0.94427 | 0.12316 | 0.81549 | 0.72140 | 0.09409 | 1.34412 | 1.18903 | 0.15509 | 2.6252 | 2.3223 | 0.3029 |
| 2000 | 0.41714 | 0.36080 | 0.05634 | 0.39779 | 0.34406 | 0.05373 | 1.09286 | 0.94525 | 0.14761 | 0.83491 | 0.72214 | 0.11277 | 1.37614 | 1.19027 | 0.18587 | 2.6878 | 2.3247 | 0.3630 |
| 2001 | 0.42889 | 0.36123 | 0.06766 | 0.40899 | 0.34447 | 0.06452 | 1.12364 | 0.94639 | 0.17726 | 0.85843 | 0.72301 | 0.13542 | 1.41490 | 1.19169 | 0.22321 | 2.7635 | 2.3275 | 0.4359 |
| 2002 | 0.44325 | 0.36173 | 0.08152 | 0.42268 | 0.34495 | 0.07774 | 1.16126 | 0.94769 | 0.21357 | 0.88716 | 0.72400 | 0.16316 | 1.46226 | 1.19333 | 0.26893 | 2.8560 | 2.3307 | 0.5252 |
| 2003 | 0.46675 | 0.36230 | 0.10345 | 0.44415 | 0.34549 | 0.09865 | 1.22022 | 0.94919 | 0.27103 | 0.93221 | 0.72515 | 0.20706 | 1.53650 | 1.19522 | 0.34128 | 3.0010 | 2.3344 | 0.6666 |
| 2004 | 0.49681 | 0.36296 | 0.13385 | 0.47376 | 0.34613 | 0.12764 | 1.30159 | 0.95093 | 0.35067 | 0.99438 | 0.72648 | 0.26790 | 1.63897 | 1.19741 | 0.44156 | 3.2011 | 2.3387 | 0.8624 |
| 2005 | 0.53808 | 0.36373 | 0.17435 | 0.51312 | 0.34685 | 0.16626 | 1.40971 | 0.95293 | 0.45678 | 1.07697 | 0.72801 | 0.34896 | 1.77511 | 1.19993 | 0.57518 | 3.4670 | 2.3436 | 1.1234 |
| 2006 | 0.57353 | 0.36461 | 0.20892 | 0.54692 | 0.34770 | 0.19923 | 1.50258 | 0.95524 | 0.54734 | 1.14792 | 0.72977 | 0.41815 | 1.89205 | 1.20284 | 0.68921 | 3.6954 | 2.3493 | 1.3461 |
| 2007 | 0.61588 | 0.36563 | 0.25025 | 0.58731 | 0.34867 | 0.23864 | 1.61354 | 0.95792 | 0.65563 | 1.23270 | 0.73182 | 0.50088 | 2.03178 | 1.20621 | 0.82557 | 3.9683 | 2.3559 | 1.6124 |
| 2008 | 0.67304 | 0.36681 | 0.30623 | 0.64182 | 0.34980 | 0.29202 | 1.76329 | 0.96101 | 0.80228 | 1.34710 | 0.73418 | 0.61292 | 2.22034 | 1.21011 | 1.01023 | 4.3366 | 2.3635 | 1.9731 |
| 2009 | 0.75345 | 0.36818 | 0.38527 | 0.71850 | 0.35110 | 0.36740 | 1.97396 | 0.96459 | 1.00937 | 1.50804 | 0.73692 | 0.77113 | 2.48562 | 1.21462 | 1.27100 | 4.8547 | 2.3723 | 2.4824 |
| 2010 | 0.87347 | 0.36977 | 0.50370 | 0.83295 | 0.35261 | 0.48033 | 2.28839 | 0.96875 | 1.31964 | 1.74826 | 0.74009 | 1.00816 | 2.88154 | 1.21985 | 1.66170 | 5.6280 | 2.3825 | 3.2455 |

FUENTE: Elaboración propia a partir de los cuadros N° A.5.95 y A. 5.50

Cuadro N° A.5.5.121

CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{er} CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 3.5%

TRAMO 1

(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.5% | 33.3% | 6.5% | 8.4% | 21.2% | | | | | | |
| 1995 | 2059 | 37,753.25 | 39,274.42 | 52,111.39 | 27,030.92 | 52,527.36 | 100,613.08 | -336,000.00 | -26,689.58 | 16,800,001.00 | 3769.83 | -0.16 |
| 1996 | 2131 | 41,450.06 | 43,120.18 | 57,214.13 | 29,678.95 | 57,673.11 | 107,921.00 | -336,000.00 | 1,057.42 | 16,800,001.00 | 3,886.08 | 0.01 |
| 1997 | 2206 | 45,466.82 | 47,298.78 | 62,758.50 | 32,556.20 | 63,264.26 | 115,805.72 | -336,000.00 | 31,150.28 | 16,800,001.00 | 4,005.13 | 0.19 |
| 1998 | 2283 | 49,830.91 | 51,838.72 | 68,782.30 | 35,682.28 | 69,338.97 | 124,189.78 | -336,000.00 | 63,662.95 | 16,800,001.00 | 4,126.97 | 0.38 |
| 1999 | 2363 | 54,572.17 | 56,771.01 | 75,326.71 | 39,078.57 | 75,938.74 | 133,210.71 | -336,000.00 | 98,897.91 | 16,800,001.00 | 4,251.58 | 0.59 |
| 2000 | 2446 | 59,723.11 | 62,129.50 | 82,436.59 | 42,768.35 | 83,108.86 | 142,785.26 | -336,000.00 | 136,951.67 | 16,800,001.00 | 4,378.93 | 0.81 |
| 2001 | 2531 | 65,319.18 | 67,951.04 | 90,160.89 | 46,777.04 | 90,898.67 | 153,183.72 | -336,000.00 | 178,290.53 | 16,800,001.00 | 4,508.97 | 1.06 |
| 2002 | 2620 | 71,399.06 | 74,275.89 | 98,552.99 | 51,132.34 | 99,362.02 | 164,329.61 | -336,000.00 | 223,051.91 | 16,800,001.00 | 4,641.65 | 1.33 |
| 2003 | 2712 | 78,004.98 | 81,147.99 | 107,671.20 | 55,864.51 | 108,557.73 | 176,130.54 | -336,000.00 | 271,376.95 | 16,800,001.00 | 4,776.88 | 1.61 |
| 2004 | 2807 | 85,183.10 | 88,615.33 | 117,579.21 | 61,006.61 | 118,550.04 | 187,810.35 | -336,000.00 | 322,744.64 | 16,800,001.00 | 4,914.57 | 1.92 |
| 2005 | 2905 | 92,983.87 | 96,730.40 | 128,346.66 | 66,594.80 | 129,409.19 | 199,744.90 | -336,000.00 | 377,809.83 | 16,800,001.00 | 5,054.59 | 2.25 |
| 2006 | 3006 | 101,462.48 | 105,550.64 | 140,049.76 | 72,668.62 | 141,212.03 | 212,551.89 | -336,000.00 | 437,495.42 | 16,800,001.00 | 5,196.81 | 2.60 |
| 2007 | 3112 | 110,440.71 | 114,890.63 | 152,442.47 | 79,100.38 | 153,710.43 | 226,146.07 | -336,000.00 | 500,730.69 | 16,800,001.00 | 5,342.71 | 2.98 |
| 2008 | 3221 | 119,517.54 | 124,333.18 | 164,971.27 | 85,602.73 | 166,346.02 | 240,698.70 | -336,000.00 | 565,469.44 | 16,800,001.00 | 5,495.36 | 3.36 |
| 2009 | 3333 | 129,347.82 | 134,559.54 | 178,540.06 | 92,644.89 | 180,030.56 | 256,259.18 | -336,000.00 | 635,382.05 | 16,800,001.00 | 5,650.46 | 3.78 |
| 2010 | 3450 | 139,997.18 | 145,638.00 | 193,239.45 | 100,273.87 | 194,855.44 | 272,878.74 | -336,000.00 | 710,882.68 | 16,800,001.00 | 5,807.82 | 4.23 |

Cuadro N° A.5.5.122

CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4°. CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 3.5%

TRAMO 1

(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|-----------|----------|----------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.5% | 33.3% | 6.5% | 8.4% | 21.2% | | | | | | |
| 1995 | 2059 | 978.12 | 1,017.53 | 1,350.11 | 719.25 | 1,397.68 | 100,613.08 | -187,964.00 | -81,888.24 | 21,724,500.00 | 4019.19 | -0.38 |
| 1996 | 2131 | 1,048.15 | 1,090.38 | 1,446.78 | 770.08 | 1,496.45 | 107,921.00 | -187,964.00 | -74,191.15 | 21,724,500.00 | 4,160.22 | -0.34 |
| 1997 | 2206 | 1,123.22 | 1,168.47 | 1,550.39 | 824.54 | 1,602.27 | 115,805.72 | -187,964.00 | -65,889.39 | 21,724,500.00 | 4,306.22 | -0.30 |
| 1998 | 2283 | 1,203.67 | 1,252.17 | 1,661.45 | 882.88 | 1,715.64 | 124,189.78 | -187,964.00 | -57,058.41 | 21,724,500.00 | 4,457.35 | -0.26 |
| 1999 | 2363 | 1,289.91 | 1,341.88 | 1,780.48 | 945.39 | 1,837.11 | 133,210.71 | -187,964.00 | -47,558.52 | 21,724,500.00 | 4,613.80 | -0.22 |
| 2000 | 2446 | 1,382.34 | 1,438.04 | 1,908.07 | 1,012.36 | 1,967.26 | 142,785.26 | -187,964.00 | -37,470.67 | 21,724,500.00 | 4,775.76 | -0.17 |
| 2001 | 2531 | 1,481.42 | 1,541.11 | 2,044.82 | 1,084.12 | 2,106.71 | 153,183.72 | -187,964.00 | -26,522.09 | 21,724,500.00 | 4,943.42 | -0.12 |
| 2002 | 2620 | 1,587.62 | 1,651.59 | 2,191.42 | 1,161.02 | 2,256.13 | 164,329.61 | -187,964.00 | -14,786.61 | 21,724,500.00 | 5,116.99 | -0.07 |
| 2003 | 2712 | 1,701.47 | 1,770.02 | 2,348.56 | 1,243.41 | 2,416.24 | 176,130.54 | -187,964.00 | -2,353.76 | 21,724,500.00 | 5,296.67 | -0.01 |
| 2004 | 2807 | 1,823.50 | 1,896.98 | 2,517.00 | 1,331.71 | 2,587.82 | 187,810.35 | -187,964.00 | 10,003.36 | 21,724,500.00 | 5,482.68 | 0.05 |
| 2005 | 2905 | 1,954.32 | 2,033.07 | 2,697.57 | 1,426.33 | 2,771.69 | 199,744.90 | -187,964.00 | 22,663.88 | 21,724,500.00 | 5,675.24 | 0.10 |
| 2006 | 3006 | 2,094.56 | 2,178.96 | 2,891.15 | 1,527.73 | 2,968.73 | 212,551.89 | -187,964.00 | 36,249.02 | 21,724,500.00 | 5,874.59 | 0.17 |
| 2007 | 3112 | 2,244.91 | 2,335.36 | 3,098.67 | 1,636.40 | 3,179.91 | 226,146.07 | -187,964.00 | 50,677.32 | 21,724,500.00 | 6,080.98 | 0.23 |
| 2008 | 3221 | 2,406.09 | 2,503.04 | 3,321.15 | 1,752.87 | 3,406.24 | 240,698.70 | -187,964.00 | 66,124.08 | 21,724,500.00 | 6,294.64 | 0.30 |
| 2009 | 3333 | 2,578.89 | 2,682.80 | 3,559.67 | 1,877.70 | 3,648.81 | 256,259.18 | -187,964.00 | 82,643.05 | 21,724,500.00 | 6,515.83 | 0.38 |
| 2010 | 3450 | 2,764.15 | 2,875.53 | 3,815.39 | 2,011.50 | 3,908.81 | 272,878.74 | -187,964.00 | 100,290.12 | 21,724,500.00 | 6,744.83 | 0.46 |

Cuadro N° A.5.5.123

**CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDAC DE 3.5%**

TRAMO 1

(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI $\frac{4}{5+6}$ |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|------------------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.5% | 33.3% | 6.5% | 8.4% | 21.2% | | | | | | |
| 1995 | 2059 | 38,731.37 | 40,291.94 | 53,461.50 | 27,750.17 | 53,925.04 | 100,613.08 | -559,320.00 | -244,546.89 | 36,344,700.00 | 3756.09 | -0.67 |
| 1996 | 2131 | 42,498.21 | 44,210.56 | 58,660.91 | 30,449.04 | 59,169.56 | 107,921.00 | -559,320.00 | -216,410.72 | 36,344,700.00 | 3,871.36 | -0.60 |
| 1997 | 2206 | 46,590.03 | 48,467.26 | 64,308.89 | 33,380.74 | 64,866.54 | 115,805.72 | -559,320.00 | -185,900.83 | 36,344,700.00 | 3,989.36 | -0.51 |
| 1998 | 2283 | 51,034.58 | 53,090.89 | 70,443.75 | 36,565.16 | 71,054.61 | 124,189.78 | -559,320.00 | -152,941.23 | 36,344,700.00 | 4,110.07 | -0.42 |
| 1999 | 2363 | 55,862.08 | 58,112.90 | 77,107.18 | 40,023.96 | 77,775.86 | 133,210.71 | -559,320.00 | -117,227.32 | 36,344,700.00 | 4,233.48 | -0.32 |
| 2000 | 2446 | 61,105.45 | 63,567.54 | 84,344.65 | 43,780.72 | 85,076.11 | 142,785.26 | -559,320.00 | -78,660.26 | 36,344,700.00 | 4,359.54 | -0.22 |
| 2001 | 2531 | 66,800.60 | 69,492.15 | 92,205.71 | 47,861.16 | 93,005.37 | 153,183.72 | -559,320.00 | -36,771.28 | 36,344,700.00 | 4,488.20 | -0.10 |
| 2002 | 2620 | 72,986.68 | 75,927.49 | 100,744.41 | 52,293.36 | 101,618.15 | 164,329.61 | -559,320.00 | 8,579.69 | 36,344,700.00 | 4,619.39 | 0.02 |
| 2003 | 2712 | 79,706.45 | 82,918.01 | 110,019.76 | 57,107.92 | 110,973.97 | 176,130.54 | -559,320.00 | 57,536.65 | 36,344,700.00 | 4,753.03 | 0.16 |
| 2004 | 2807 | 87,006.60 | 90,512.30 | 120,096.21 | 62,338.32 | 121,137.86 | 187,810.35 | -559,320.00 | 109,581.65 | 36,344,700.00 | 4,889.01 | 0.30 |
| 2005 | 2905 | 94,938.19 | 98,763.47 | 131,044.24 | 68,021.13 | 132,180.87 | 199,744.90 | -559,320.00 | 165,372.81 | 36,344,700.00 | 5,027.20 | 0.45 |
| 2006 | 3006 | 103,557.05 | 107,729.60 | 142,940.91 | 74,196.35 | 144,180.77 | 212,551.89 | -559,320.00 | 225,836.56 | 36,344,700.00 | 5,167.46 | 0.62 |
| 2007 | 3112 | 112,685.62 | 117,225.99 | 155,541.14 | 80,736.78 | 156,890.33 | 226,146.07 | -559,320.00 | 289,905.94 | 36,344,700.00 | 5,311.26 | 0.80 |
| 2008 | 3221 | 121,923.63 | 126,836.22 | 168,292.42 | 87,355.60 | 169,752.26 | 240,698.70 | -559,320.00 | 355,538.82 | 36,344,700.00 | 5,461.66 | 0.98 |
| 2009 | 3333 | 131,926.71 | 137,242.34 | 182,099.73 | 94,522.59 | 183,679.37 | 256,259.18 | -559,320.00 | 426,409.92 | 36,344,700.00 | 5,614.34 | 1.17 |
| 2010 | 3450 | 142,761.34 | 148,513.53 | 197,054.83 | 102,285.37 | 198,764.26 | 272,878.74 | -559,320.00 | 502,938.07 | 36,344,700.00 | 5,769.12 | 1.38 |

Cuadro N° A.5.5.124

**CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{er} CARRIL
TASA DE CRECIMIENTO DEL TPDAc DE 7%**

TRAMO 1

(Cantidades de N\$ a febrero de 1995)

| Año | TPDAc | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI $\frac{4}{5+6}$ |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|------------------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.5% | 33.3% | 6.5% | 8.4% | 21.2% | | | | | | |
| 1995 | 2059 | 37,753.25 | 39,274.42 | 52,111.39 | 27,116.40 | 52,693.47 | 100,641.09 | -336,000.00 | -26,409.99 | 16,800,001.00 | 3769.36 | -0.16 |
| 1996 | 2203 | 45,327.79 | 47,154.16 | 62,566.60 | 32,548.11 | 63,248.55 | 115,530.99 | -336,000.00 | 30,376.20 | 16,800,001.00 | 4,000.62 | 0.18 |
| 1997 | 2358 | 54,244.44 | 56,430.07 | 74,874.33 | 38,941.75 | 75,672.87 | 132,599.93 | -336,000.00 | 96,763.37 | 16,800,001.00 | 4,242.67 | 0.58 |
| 1998 | 2523 | 64,739.73 | 67,348.25 | 89,361.07 | 46,466.81 | 90,295.82 | 152,165.15 | -336,000.00 | 174,376.82 | 16,800,001.00 | 4,495.30 | 1.04 |
| 1999 | 2699 | 77,094.17 | 80,200.47 | 106,414.00 | 55,324.29 | 107,507.96 | 174,589.98 | -336,000.00 | 265,130.87 | 16,800,001.00 | 4,758.13 | 1.58 |
| 2000 | 2888 | 91,641.14 | 95,333.58 | 126,493.29 | 65,753.09 | 127,773.55 | 197,802.12 | -336,000.00 | 368,796.78 | 16,800,001.00 | 5,030.48 | 2.19 |
| 2001 | 3090 | 108,714.14 | 113,094.49 | 150,059.28 | 77,992.18 | 151,556.94 | 223,449.48 | -336,000.00 | 488,866.51 | 16,800,001.00 | 5,311.85 | 2.91 |
| 2002 | 3307 | 126,988.46 | 132,105.12 | 175,283.42 | 91,092.45 | 177,013.82 | 252,602.15 | -336,000.00 | 619,085.42 | 16,800,001.00 | 5,613.38 | 3.68 |
| 2003 | 3538 | 148,375.50 | 154,353.90 | 204,804.09 | 106,423.44 | 206,805.49 | 285,753.28 | -336,000.00 | 770,515.71 | 16,800,001.00 | 5,923.83 | 4.58 |
| 2004 | 3786 | 173,436.24 | 180,424.39 | 239,395.56 | 124,387.09 | 241,713.04 | 323,466.45 | -336,000.00 | 946,822.76 | 16,800,001.00 | 6,241.51 | 5.63 |
| 2005 | 4051 | 202,842.70 | 211,015.71 | 279,985.45 | 145,464.94 | 282,672.21 | 366,385.78 | -336,000.00 | 1,152,366.79 | 16,800,001.00 | 6,564.15 | 6.86 |
| 2006 | 4334 | 237,403.05 | 246,968.57 | 327,689.27 | 170,236.07 | 330,808.27 | 388,387.72 | -336,000.00 | 1,365,492.94 | 16,800,001.00 | 6,888.68 | 8.12 |
| 2007 | 4638 | 278,093.13 | 289,298.15 | 383,853.98 | 199,399.69 | 387,479.97 | 403,307.82 | -336,000.00 | 1,605,432.74 | 16,800,001.00 | 7,211.10 | 9.55 |
| 2008 | 4963 | 326,096.72 | 339,235.92 | 450,113.55 | 233,804.01 | 454,335.56 | 417,494.83 | -336,000.00 | 1,885,080.58 | 16,800,001.00 | 7,526.13 | 11.22 |
| 2009 | 5310 | 394,847.34 | 410,756.67 | 545,010.36 | 283,073.90 | 550,078.41 | 430,639.88 | -336,000.00 | 2,278,406.55 | 16,800,001.00 | 7,743.38 | 13.56 |
| 2010 | 5682 | 478,769.18 | 498,059.92 | 660,848.05 | 343,214.46 | 666,945.52 | 395,773.85 | -336,000.00 | 2,707,610.99 | 16,800,001.00 | 7,905.19 | 16.11 |

Cuadro N° A.5.5.125
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4° CARRIL
TASA DE CRECIMIENTO DEL TPDac DE 7%
TRAMO 1
(Cantidades de N\$ a febrero de 1995)

| Año | TPDac | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|-----------|----------|-----------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.5% | 33.3% | 6.5% | 8.4% | 21.2% | | | | | | |
| 1995 | 2059 | 978.12 | 1,017.53 | 1,350.11 | 633.78 | 1,231.58 | 100,641.09 | -187,964.00 | -82,111.81 | 21,724,500.00 | 4019.42 | -0.38 |
| 1996 | 2203 | 1,120.64 | 1,165.79 | 1,546.83 | 731.17 | 1,420.83 | 115,530.99 | -187,964.00 | -66,447.76 | 21,724,500.00 | 4,301.53 | -0.31 |
| 1997 | 2358 | 1,283.98 | 1,335.72 | 1,772.30 | 843.15 | 1,638.43 | 132,599.93 | -187,964.00 | -48,490.48 | 21,724,500.00 | 4,603.49 | -0.22 |
| 1998 | 2523 | 1,471.22 | 1,530.50 | 2,030.75 | 971.89 | 1,888.60 | 152,165.15 | -187,964.00 | -27,905.89 | 21,724,500.00 | 4,926.72 | -0.13 |
| 1999 | 2699 | 1,685.86 | 1,753.79 | 2,327.02 | 1,119.87 | 2,176.17 | 174,589.98 | -187,964.00 | -4,311.31 | 21,724,500.00 | 5,272.71 | -0.02 |
| 2000 | 2888 | 1,931.93 | 2,009.77 | 2,666.67 | 1,289.96 | 2,506.70 | 197,802.12 | -187,964.00 | 20,243.16 | 21,724,500.00 | 5,643.08 | 0.09 |
| 2001 | 3090 | 2,214.06 | 2,303.27 | 3,056.10 | 1,485.45 | 2,886.58 | 223,449.48 | -187,964.00 | 47,430.94 | 21,724,500.00 | 6,039.57 | 0.22 |
| 2002 | 3307 | 2,537.58 | 2,639.82 | 3,502.64 | 1,710.11 | 3,323.14 | 252,602.15 | -187,964.00 | 78,351.44 | 21,724,500.00 | 6,464.03 | 0.36 |
| 2003 | 3538 | 2,908.58 | 3,025.77 | 4,014.73 | 1,968.29 | 3,824.84 | 285,753.28 | -187,964.00 | 113,531.48 | 21,724,500.00 | 6,918.44 | 0.52 |
| 2004 | 3786 | 3,334.08 | 3,468.42 | 4,602.07 | 2,264.97 | 4,401.37 | 323,466.45 | -187,964.00 | 153,573.35 | 21,724,500.00 | 7,404.93 | 0.71 |
| 2005 | 4051 | 3,822.17 | 3,976.17 | 5,275.77 | 2,605.91 | 5,063.88 | 366,385.78 | -187,964.00 | 199,165.68 | 21,724,500.00 | 7,925.81 | 0.92 |
| 2006 | 4334 | 4,382.11 | 4,558.68 | 6,048.67 | 2,997.70 | 5,825.22 | 388,387.72 | -187,964.00 | 224,236.09 | 21,724,500.00 | 8,483.51 | 1.03 |
| 2007 | 4638 | 5,024.58 | 5,227.04 | 6,935.47 | 3,447.94 | 6,700.15 | 403,307.82 | -187,964.00 | 242,678.99 | 21,724,500.00 | 9,080.67 | 1.12 |
| 2008 | 4963 | 5,761.86 | 5,994.02 | 7,953.13 | 3,965.38 | 7,705.66 | 417,494.83 | -187,964.00 | 260,910.88 | 21,724,500.00 | 9,720.11 | 1.20 |
| 2009 | 5310 | 6,608.07 | 6,874.32 | 9,121.16 | 4,560.10 | 8,861.33 | 430,639.88 | -187,964.00 | 278,700.85 | 21,724,500.00 | 10,404.86 | 1.28 |
| 2010 | 5682 | 7,579.47 | 7,884.87 | 10,461.99 | 5,243.68 | 10,189.68 | 395,773.85 | -187,964.00 | 249,169.55 | 21,724,500.00 | 11,138.17 | 1.15 |

Cuadro N° A.5.126
**CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDAc DE 7%**
TRAMO 1
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAc | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI $\frac{4}{5+6}$ |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|------------------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.5% | 33.3% | 6.5% | 8.4% | 21.2% | | | | | | |
| 1995 | 2059 | 38,731.37 | 40,291.94 | 53,461.50 | 27,750.17 | 53,925.04 | 100,641.09 | -559,320.00 | -244,518.89 | 36,344,700.00 | 3756.09 | -0.67 |
| 1996 | 2203 | 46,448.43 | 48,319.94 | 64,113.43 | 33,279.28 | 64,669.38 | 115,530.99 | -559,320.00 | -186,958.55 | 36,344,700.00 | 3,985.39 | -0.51 |
| 1997 | 2358 | 55,528.42 | 57,765.79 | 76,646.63 | 39,784.89 | 77,311.30 | 132,599.93 | -559,320.00 | -119,683.04 | 36,344,700.00 | 4,225.19 | -0.33 |
| 1998 | 2523 | 66,210.95 | 68,878.75 | 91,391.82 | 47,438.70 | 92,184.42 | 152,165.15 | -559,320.00 | -41,050.22 | 36,344,700.00 | 4,475.25 | -0.11 |
| 1999 | 2699 | 78,780.03 | 81,954.26 | 108,741.01 | 56,444.16 | 109,684.13 | 174,589.98 | -559,320.00 | 50,873.58 | 36,344,700.00 | 4,735.11 | 0.14 |
| 2000 | 2888 | 93,573.07 | 97,343.35 | 129,159.96 | 67,043.06 | 130,280.25 | 197,802.12 | -559,320.00 | 155,881.81 | 36,344,700.00 | 5,004.07 | 0.43 |
| 2001 | 3090 | 110,928.21 | 115,397.77 | 153,115.37 | 79,477.63 | 154,443.52 | 223,449.48 | -559,320.00 | 277,491.97 | 36,344,700.00 | 5,281.54 | 0.76 |
| 2002 | 3307 | 129,526.03 | 134,744.94 | 178,786.07 | 92,802.56 | 180,336.96 | 252,602.15 | -559,320.00 | 409,478.71 | 36,344,700.00 | 5,578.60 | 1.13 |
| 2003 | 3538 | 151,284.08 | 157,379.67 | 208,818.82 | 108,391.72 | 210,630.33 | 285,753.28 | -559,320.00 | 562,937.91 | 36,344,700.00 | 5,883.92 | 1.55 |
| 2004 | 3786 | 176,770.32 | 183,892.81 | 243,997.62 | 126,652.06 | 246,114.40 | 323,466.45 | -559,320.00 | 741,573.67 | 36,344,700.00 | 6,195.71 | 2.04 |
| 2005 | 4051 | 206,664.87 | 214,991.89 | 285,261.23 | 148,070.85 | 287,736.09 | 366,385.78 | -559,320.00 | 949,790.70 | 36,344,700.00 | 6,511.59 | 2.61 |
| 2006 | 4334 | 241,785.16 | 251,527.25 | 333,737.93 | 173,233.76 | 336,633.49 | 388,387.72 | -559,320.00 | 1,165,985.31 | 36,344,700.00 | 6,828.38 | 3.21 |
| 2007 | 4638 | 283,117.71 | 294,525.19 | 390,789.45 | 202,847.63 | 394,180.12 | 403,307.82 | -559,320.00 | 1,409,447.92 | 36,344,700.00 | 7,141.89 | 3.88 |
| 2008 | 4963 | 331,858.58 | 345,229.94 | 458,066.69 | 237,769.39 | 462,041.22 | 417,494.83 | -559,320.00 | 1,693,140.64 | 36,344,700.00 | 7,446.71 | 4.66 |
| 2009 | 5310 | 401,455.41 | 417,630.99 | 554,131.52 | 287,633.99 | 558,939.74 | 430,639.88 | -559,320.00 | 2,091,111.52 | 36,344,700.00 | 7,652.23 | 5.75 |
| 2010 | 5682 | 486,348.66 | 505,944.79 | 671,310.04 | 348,458.14 | 677,135.21 | 395,773.85 | -559,320.00 | 2,525,650.68 | 36,344,700.00 | 7,800.55 | 6.95 |

Cuadro N° A.5.5.127

CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{er} CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 10%

TRAMO 1

(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|---------------------|-------------------|------------------|-------------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos 30.5% | Camionetas 33.3% | Autobuses 6.5% | Cam. 2 E 8.4% | Cam +2 E 21.2% | | | | | | |
| | | | | | | | | | | | | |
| 1995 | 2059 | 33,737.60 | 35,096.97 | 46,568.53 | 24,172.25 | 46,972.31 | 100,641.09 | -336,000.00 | -48,811.26 | 16,800,001.00 | 3825.71 | -0.29 |
| 1996 | 2265 | 43,929.20 | 45,699.21 | 60,636.08 | 31,474.31 | 61,161.89 | 122,226.59 | -336,000.00 | 29,127.28 | 16,800,001.00 | 4,166.51 | 0.17 |
| 1997 | 2492 | 56,790.72 | 59,078.95 | 78,388.95 | 40,689.30 | 79,068.78 | 148,390.15 | -336,000.00 | 126,406.84 | 16,800,001.00 | 4,531.12 | 0.75 |
| 1998 | 2741 | 73,019.60 | 75,961.73 | 100,789.82 | 52,316.94 | 101,663.99 | 180,083.26 | -336,000.00 | 247,835.35 | 16,800,001.00 | 4,919.18 | 1.47 |
| 1999 | 3015 | 93,507.32 | 97,274.95 | 129,069.16 | 66,995.94 | 130,188.69 | 213,699.90 | -336,000.00 | 394,735.95 | 16,800,001.00 | 5,329.48 | 2.35 |
| 2000 | 3316 | 117,313.57 | 122,040.41 | 161,929.07 | 84,052.60 | 163,333.74 | 253,955.94 | -336,000.00 | 566,625.32 | 16,800,001.00 | 5,774.17 | 3.37 |
| 2001 | 3648 | 146,426.91 | 152,326.80 | 202,114.40 | 104,911.67 | 203,867.78 | 302,203.65 | -336,000.00 | 775,851.21 | 16,800,001.00 | 6,245.61 | 4.62 |
| 2002 | 4013 | 182,937.17 | 190,308.14 | 252,509.70 | 131,070.47 | 254,700.41 | 360,075.08 | -336,000.00 | 1,035,600.98 | 16,800,001.00 | 6,736.20 | 6.16 |
| 2003 | 4414 | 228,867.33 | 238,088.93 | 315,907.32 | 163,978.42 | 318,648.21 | 392,465.86 | -336,000.00 | 1,321,956.07 | 16,800,001.00 | 7,239.62 | 7.87 |
| 2004 | 4856 | 286,863.07 | 298,421.46 | 395,959.12 | 205,531.10 | 399,394.72 | 413,027.55 | -336,000.00 | 1,663,197.03 | 16,800,001.00 | 7,746.16 | 9.90 |
| 2005 | 5341 | 373,675.04 | 388,731.29 | 515,786.09 | 267,729.97 | 520,261.60 | 431,721.59 | -336,000.00 | 2,161,905.58 | 16,800,001.00 | 8,148.85 | 12.86 |
| 2006 | 5875 | 492,952.71 | 512,814.93 | 680,425.57 | 353,189.80 | 686,329.92 | 353,038.09 | -336,000.00 | 2,742,751.01 | 16,800,001.00 | 8,433.26 | 16.32 |
| 2007 | 6463 | 651,027.14 | 677,258.56 | 898,616.36 | 466,446.66 | 906,414.35 | 200,767.18 | -336,000.00 | 3,464,530.25 | 16,800,001.00 | 8,567.68 | 20.61 |
| 2008 | 7109 | 862,590.75 | 897,346.56 | 1,190,638.42 | 618,027.35 | 1,200,970.87 | -6,121.52 | -336,000.00 | 4,427,452.43 | 16,800,001.00 | 8,463.73 | 26.34 |
| 2009 | 7820 | 1,034,502.60 | 1,076,185.15 | 1,427,928.83 | 741,198.42 | 1,440,320.90 | -281,361.82 | -336,000.00 | 5,102,774.08 | 16,800,001.00 | 8,786.49 | 30.36 |
| 2010 | 8602 | 1,199,690.33 | 1,248,028.67 | 1,655,937.82 | 859,551.80 | 1,670,309.05 | -570,161.07 | -336,000.00 | 5,727,356.59 | 16,800,001.00 | 9,324.49 | 34.07 |

Cuadro N° A.5.128
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4° CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 10%
TRAMO 1
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAc | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|------------|-----------|------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.5% | 33.3% | 6.5% | 8.4% | 21.2% | | | | | | |
| 1995 | 2059 | 4,993.76 | 5,194.98 | 6,892.97 | 3,577.92 | 6,952.74 | 100,641.09 | -187,964.00 | -59,710.55 | 21,724,500.00 | 3991.25 | -0.27 |
| 1996 | 2265 | 6,052.78 | 6,296.66 | 8,354.73 | 4,336.68 | 8,427.18 | 122,226.59 | -187,964.00 | -32,269.37 | 21,724,500.00 | 4,388.33 | -0.15 |
| 1997 | 2492 | 7,337.64 | 7,633.29 | 10,128.24 | 5,257.26 | 10,216.08 | 148,390.15 | -187,964.00 | 998.66 | 21,724,500.00 | 4,824.67 | 0.00 |
| 1998 | 2741 | 8,896.95 | 9,255.43 | 12,280.56 | 6,374.47 | 12,387.07 | 180,083.26 | -187,964.00 | 41,313.74 | 21,724,500.00 | 5,304.11 | 0.19 |
| 1999 | 3015 | 10,789.89 | 11,224.64 | 14,893.40 | 7,730.72 | 15,022.58 | 213,699.90 | -187,964.00 | 85,397.11 | 21,724,500.00 | 5,830.82 | 0.39 |
| 2000 | 3316 | 13,088.60 | 13,615.97 | 18,066.33 | 9,377.70 | 18,223.05 | 253,955.94 | -187,964.00 | 138,363.59 | 21,724,500.00 | 6,409.40 | 0.64 |
| 2001 | 3648 | 15,881.11 | 16,521.00 | 21,920.84 | 11,378.47 | 22,111.01 | 302,203.65 | -187,964.00 | 202,052.09 | 21,724,500.00 | 7,044.84 | 0.93 |
| 2002 | 4013 | 19,274.86 | 20,051.49 | 26,605.25 | 13,810.01 | 26,836.07 | 360,075.08 | -187,964.00 | 278,688.75 | 21,724,500.00 | 7,742.60 | 1.28 |
| 2003 | 4414 | 23,401.13 | 24,344.02 | 32,300.76 | 16,766.40 | 32,581.01 | 392,465.86 | -187,964.00 | 333,895.17 | 21,724,500.00 | 8,508.65 | 1.54 |
| 2004 | 4856 | 28,420.53 | 29,565.66 | 39,229.06 | 20,362.69 | 39,569.43 | 413,027.55 | -187,964.00 | 382,210.92 | 21,724,500.00 | 9,349.45 | 1.76 |
| 2005 | 5341 | 34,529.70 | 35,920.98 | 47,661.57 | 24,739.77 | 48,075.13 | 431,721.59 | -187,964.00 | 434,684.76 | 21,724,500.00 | 10,272.07 | 2.00 |
| 2006 | 5875 | 41,969.75 | 43,660.81 | 57,931.09 | 30,070.40 | 58,433.78 | 534,879.87 | -187,964.00 | 578,981.70 | 21,724,500.00 | 11,284.15 | 2.66 |
| 2007 | 6463 | 51,036.65 | 53,093.03 | 70,446.16 | 36,566.64 | 71,057.48 | 638,019.99 | -187,964.00 | 732,255.95 | 21,724,500.00 | 12,393.98 | 3.37 |
| 2008 | 7109 | 62,094.32 | 64,596.24 | 85,709.10 | 44,489.21 | 86,452.89 | 763,239.67 | -187,964.00 | 918,617.44 | 21,724,500.00 | 13,610.51 | 4.23 |
| 2009 | 7820 | 75,590.92 | 78,636.65 | 104,338.50 | 54,159.23 | 105,243.99 | 916,297.98 | -187,964.00 | 1,146,303.27 | 21,724,500.00 | 14,943.37 | 5.27 |
| 2010 | 8602 | 92,079.37 | 95,789.47 | 127,097.56 | 65,972.85 | 128,200.59 | 1,069,733.62 | -187,964.00 | 1,390,909.47 | 21,724,500.00 | 16,402.91 | 6.40 |

Cuadro N° A.5.129
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDAC DE 10%
TRAMO 1
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|--------------|--------------|------------|--------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.5% | 33.3% | 6.5% | 8.4% | 21.2% | | | | | | |
| 1995 | 2059 | 38,731.37 | 40,291.94 | 53,461.50 | 27,750.17 | 53,925.04 | 100,641.09 | -559,320.00 | -244,518.89 | 36,344,700.00 | 3756.09 | -0.67 |
| 1996 | 2265 | 49,981.97 | 51,995.87 | 68,990.82 | 35,810.99 | 69,589.08 | 122,226.59 | -559,320.00 | -160,724.68 | 36,344,700.00 | 4,082.14 | -0.44 |
| 1997 | 2492 | 64,128.36 | 66,712.24 | 88,517.19 | 45,946.56 | 89,284.85 | 148,390.15 | -559,320.00 | -56,340.64 | 36,344,700.00 | 4,428.83 | -0.15 |
| 1998 | 2741 | 81,916.55 | 85,217.16 | 113,070.38 | 58,691.41 | 114,051.06 | 180,083.26 | -559,320.00 | 73,709.83 | 36,344,700.00 | 4,795.15 | 0.20 |
| 1999 | 3015 | 104,297.20 | 108,499.58 | 143,962.55 | 74,726.66 | 145,211.27 | 213,699.90 | -559,320.00 | 231,077.16 | 36,344,700.00 | 5,179.06 | 0.64 |
| 2000 | 3316 | 130,402.17 | 135,656.38 | 179,995.40 | 93,430.29 | 181,556.79 | 253,955.94 | -559,320.00 | 415,676.98 | 36,344,700.00 | 5,591.71 | 1.14 |
| 2001 | 3648 | 162,308.03 | 168,847.80 | 224,035.24 | 116,290.14 | 225,978.79 | 302,203.65 | -559,320.00 | 640,343.64 | 36,344,700.00 | 6,024.22 | 1.76 |
| 2002 | 4013 | 202,212.03 | 210,359.63 | 279,114.95 | 144,880.48 | 281,536.47 | 360,075.08 | -559,320.00 | 918,858.65 | 36,344,700.00 | 6,467.50 | 2.53 |
| 2003 | 4414 | 252,268.46 | 262,432.95 | 348,208.09 | 180,744.82 | 351,229.22 | 392,465.86 | -559,320.00 | 1,228,029.39 | 36,344,700.00 | 6,913.40 | 3.38 |
| 2004 | 4856 | 315,283.60 | 327,987.12 | 435,188.18 | 225,893.78 | 438,964.16 | 413,027.55 | -559,320.00 | 1,597,024.39 | 36,344,700.00 | 7,349.97 | 4.39 |
| 2005 | 5341 | 408,204.75 | 424,652.28 | 563,447.66 | 292,469.74 | 568,336.73 | 431,721.59 | -559,320.00 | 2,129,512.75 | 36,344,700.00 | 7,667.49 | 5.86 |
| 2006 | 5875 | 534,922.45 | 556,475.74 | 738,356.66 | 383,260.20 | 744,763.70 | 534,879.87 | -559,320.00 | 2,933,338.62 | 36,344,700.00 | 7,848.19 | 8.07 |
| 2007 | 6463 | 702,063.79 | 730,351.59 | 969,062.52 | 503,013.30 | 977,471.83 | 638,019.99 | -559,320.00 | 3,960,663.02 | 36,344,700.00 | 7,856.21 | 10.90 |
| 2008 | 7109 | 924,685.07 | 961,942.81 | 1,276,347.52 | 662,516.56 | 1,287,423.76 | 763,239.67 | -559,320.00 | 5,316,835.39 | 36,344,700.00 | 7,598.11 | 14.63 |
| 2009 | 7820 | 1,110,093.52 | 1,154,821.80 | 1,532,267.33 | 795,357.65 | 1,545,564.89 | 916,297.98 | -559,320.00 | 6,495,083.17 | 36,344,700.00 | 7,732.72 | 17.87 |
| 2010 | 8602 | 1,291,769.70 | 1,343,818.14 | 1,783,035.38 | 925,524.65 | 1,798,509.64 | 1,069,733.62 | -559,320.00 | 7,653,071.13 | 36,344,700.00 | 8,040.88 | 21.05 |

Cuadro N° A.5.130

CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{er}. CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 15%

TRAMO 1

(Cantidades de N\$ a febrero de 1995)

| Año | TPDAc | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|--------------|---------------|--------------|---------------|---|--|--------------------------------|------------------|--------------------------------|---------------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.5% | 33.3% | 6.5% | 8.4% | 21.2% | | | | | | |
| 1995 | 2059 | 33,737.60 | 35,096.97 | 46,568.53 | 24,172.25 | 46,972.31 | 100,641.09 | -336,000.00 | -48,811.26 | 16,800,001.00 | 3825.71 | -0.29 |
| 1996 | 2368 | 49,556.97 | 51,553.73 | 68,404.15 | 35,506.48 | 68,997.35 | 133,804.90 | -336,000.00 | 71,823.56 | 16,800,001.00 | 4,333.61 | 0.43 |
| 1997 | 2723 | 71,806.36 | 74,699.60 | 99,115.16 | 51,447.68 | 99,974.80 | 177,770.10 | -336,000.00 | 238,813.70 | 16,800,001.00 | 4,892.38 | 1.42 |
| 1998 | 3132 | 102,712.90 | 106,851.44 | 141,775.68 | 73,591.54 | 143,005.47 | 228,902.81 | -336,000.00 | 460,839.84 | 16,800,001.00 | 5,501.83 | 2.74 |
| 1999 | 3602 | 142,121.09 | 147,847.49 | 196,171.05 | 101,826.64 | 197,872.85 | 295,196.49 | -336,000.00 | 745,035.61 | 16,800,001.00 | 6,181.01 | 4.43 |
| 2000 | 4142 | 197,023.68 | 204,962.23 | 271,953.38 | 141,163.15 | 274,312.82 | 380,298.79 | -336,000.00 | 1,133,714.05 | 16,800,001.00 | 6,902.29 | 6.75 |
| 2001 | 4763 | 274,042.59 | 285,084.42 | 378,262.95 | 196,345.51 | 381,544.98 | 409,003.13 | -336,000.00 | 1,588,283.58 | 16,800,001.00 | 7,644.38 | 9.45 |
| 2002 | 5478 | 402,112.96 | 418,315.04 | 555,039.07 | 288,105.11 | 559,855.24 | 436,236.03 | -336,000.00 | 2,323,663.45 | 16,800,001.00 | 8,235.02 | 13.82 |
| 2003 | 6299 | 603,978.65 | 628,314.37 | 833,675.14 | 432,737.45 | 840,909.51 | 246,570.94 | -336,000.00 | 3,250,186.05 | 16,800,001.00 | 8,550.63 | 19.34 |
| 2004 | 7244 | 912,422.28 | 949,185.92 | 1,259,421.06 | 653,730.54 | 1,270,350.48 | -54,583.85 | -336,000.00 | 4,654,526.43 | 16,800,001.00 | 8,404.36 | 27.69 |
| 2005 | 8331 | 1,265,562.23 | 1,316,554.71 | 1,746,861.23 | 906,747.57 | 1,762,021.41 | -489,820.09 | -336,000.00 | 6,171,927.05 | 16,800,001.00 | 8,277.56 | 36.72 |
| 2006 | 9581 | 1,745,250.02 | 1,815,570.25 | 2,408,975.64 | 1,250,433.35 | 2,429,882.81 | -893,786.78 | -336,000.00 | 8,420,325.30 | 16,800,001.00 | 7,660.03 | 50.10 |
| 2007 | 11018 | 2,460,937.52 | 2,560,094.49 | 3,396,840.99 | 1,763,207.74 | 3,426,322.70 | -1,167,378.03 | -336,000.00 | 12,104,025.42 | 16,800,001.00 | 5,862.20 | 72.02 |
| 2008 | 12670 | 3,571,221.06 | 3,715,113.96 | 4,929,368.13 | 2,558,701.53 | 4,972,152.14 | -1,509,810.80 | -336,000.00 | 17,900,746.02 | 16,800,001.00 | 1,868.47 | 106.54 |
| 2009 | 14571 | 5,390,251.26 | 5,607,437.17 | 7,440,179.84 | 3,861,996.76 | 7,504,757.87 | -1,957,571.14 | -336,000.00 | 27,511,051.76 | 16,800,001.00 | (6,399.81) | 163.82 |
| 2010 | 16756 | 8,625,538.73 | 8,973,081.99 | 11,905,854.47 | 6,180,009.25 | 12,009,195.23 | -2,543,861.14 | -336,000.00 | 44,813,818.53 | 16,800,001.00 | (23,735.38) | 267.13 |

Cuadro N° A.5.131

CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4°. CARRIL
TASA DE CRECIMIENTO DEL TPDACDE 15%

TRAMO 1

(Cantidades de N\$ a febrero de 1995)

| Año | TPDAc | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.5% | 33.3% | 6.5% | 8.4% | 21.2% | | | | | | |
| 1995 | 2059 | 4,993.76 | 5,194.98 | 6,892.97 | 3,577.92 | 6,952.74 | 100,641.09 | -187,964.00 | -59,710.55 | 21,724,500.00 | 3991.25 | -0.27 |
| 1996 | 2368 | 6,621.19 | 6,887.97 | 9,139.32 | 4,743.94 | 9,218.57 | 133,804.90 | -187,964.00 | -17,548.11 | 21,724,500.00 | 4,586.73 | -0.08 |
| 1997 | 2723 | 8,782.40 | 9,136.26 | 12,122.45 | 6,292.40 | 12,227.59 | 177,770.10 | -187,964.00 | 38,367.19 | 21,724,500.00 | 5,270.45 | 0.18 |
| 1998 | 3132 | 11,654.28 | 12,123.85 | 16,086.52 | 8,350.03 | 16,226.06 | 228,902.81 | -187,964.00 | 105,379.55 | 21,724,500.00 | 6,055.29 | 0.48 |
| 1999 | 3602 | 15,473.30 | 16,096.76 | 21,357.94 | 11,086.28 | 21,543.22 | 295,196.49 | -187,964.00 | 192,789.99 | 21,724,500.00 | 6,955.91 | 0.89 |
| 2000 | 4142 | 20,556.12 | 21,384.37 | 28,373.77 | 14,728.01 | 28,619.94 | 380,298.79 | -187,964.00 | 305,996.99 | 21,724,500.00 | 7,989.01 | 1.41 |
| 2001 | 4763 | 27,327.54 | 28,428.63 | 37,720.39 | 19,579.58 | 38,047.68 | 409,003.13 | -187,964.00 | 372,142.94 | 21,724,500.00 | 9,173.55 | 1.71 |
| 2002 | 5478 | 36,358.73 | 37,823.71 | 50,186.19 | 26,050.23 | 50,621.66 | 436,236.03 | -187,964.00 | 449,312.55 | 21,724,500.00 | 10,530.97 | 2.07 |
| 2003 | 6299 | 48,419.60 | 50,370.54 | 66,833.84 | 34,691.58 | 67,413.81 | 569,684.87 | -187,964.00 | 649,450.24 | 21,724,500.00 | 12,085.47 | 2.99 |
| 2004 | 7244 | 64,550.95 | 67,151.86 | 89,100.00 | 46,249.34 | 89,873.22 | 746,720.38 | -187,964.00 | 915,681.74 | 21,724,500.00 | 13,864.23 | 4.21 |
| 2005 | 8331 | 86,164.62 | 89,636.40 | 118,933.41 | 61,735.06 | 119,965.58 | 974,950.56 | -187,964.00 | 1,263,421.63 | 21,724,500.00 | 15,897.57 | 5.81 |
| 2006 | 9581 | 115,183.29 | 119,824.30 | 158,987.96 | 82,526.30 | 160,367.80 | 1,173,376.35 | -187,964.00 | 1,622,302.00 | 21,724,500.00 | 18,219.01 | 7.46 |
| 2007 | 11018 | 154,237.29 | 160,451.87 | 212,894.29 | 110,507.64 | 214,742.04 | 1,425,667.77 | -187,964.00 | 2,090,536.90 | 21,724,500.00 | 20,865.22 | 9.61 |
| 2008 | 12670 | 206,944.24 | 215,282.51 | 285,645.81 | 148,271.01 | 288,125.05 | 1,609,095.02 | -187,964.00 | 2,565,399.64 | 21,724,500.00 | 23,875.59 | 11.80 |
| 2009 | 14571 | 278,310.56 | 289,524.34 | 384,152.89 | 199,403.41 | 387,487.19 | 1,810,224.96 | -187,964.00 | 3,161,139.34 | 21,724,500.00 | 27,291.38 | 14.53 |
| 2010 | 16756 | 375,314.94 | 390,437.26 | 518,048.23 | 268,904.92 | 522,544.80 | 2,028,548.82 | -187,964.00 | 3,915,834.97 | 21,724,500.00 | 31,154.02 | 18.00 |

Cuadro N° A.5.132
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDAC DE 15%
TRAMO 1
(CANTIDADES DE N\$ A FEBRERO DE 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|--------------|---------------|--------------|---------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.5% | 33.3% | 6.5% | 8.4% | 21.2% | | | | | | |
| 1995 | 2059 | 38,731.37 | 40,291.94 | 53,461.50 | 27,750.17 | 53,925.04 | 100,641.09 | -559,320.00 | -244,518.89 | 36,344,700.00 | 3756.09 | -0.67 |
| 1996 | 2368 | 56,178.16 | 58,441.71 | 77,543.46 | 40,250.42 | 78,215.92 | 133,804.90 | -559,320.00 | -114,885.44 | 36,344,700.00 | 4,241.30 | -0.32 |
| 1997 | 2723 | 80,588.75 | 83,835.86 | 111,237.61 | 57,740.07 | 112,202.39 | 177,770.10 | -559,320.00 | 64,054.79 | 36,344,700.00 | 4,769.95 | 0.18 |
| 1998 | 3132 | 114,367.17 | 118,975.30 | 157,862.20 | 81,941.57 | 159,231.53 | 228,902.81 | -559,320.00 | 301,960.58 | 36,344,700.00 | 5,339.36 | 0.83 |
| 1999 | 3602 | 157,594.39 | 163,944.24 | 217,528.98 | 112,912.92 | 219,416.07 | 295,196.49 | -559,320.00 | 607,273.10 | 36,344,700.00 | 5,965.30 | 1.67 |
| 2000 | 4142 | 217,579.80 | 226,346.60 | 300,327.16 | 155,891.15 | 302,932.76 | 380,298.79 | -559,320.00 | 1,024,056.26 | 36,344,700.00 | 6,615.73 | 2.82 |
| 2001 | 4763 | 301,370.13 | 313,513.04 | 415,983.35 | 215,925.09 | 419,592.66 | 409,003.13 | -559,320.00 | 1,516,067.39 | 36,344,700.00 | 7,263.43 | 4.17 |
| 2002 | 5478 | 438,471.69 | 456,138.75 | 605,225.26 | 314,155.35 | 610,476.90 | 436,236.03 | -559,320.00 | 2,301,383.98 | 36,344,700.00 | 7,728.17 | 6.33 |
| 2003 | 6299 | 652,398.25 | 678,684.91 | 900,508.98 | 467,429.03 | 908,323.31 | 569,684.87 | -559,320.00 | 3,617,709.35 | 36,344,700.00 | 7,875.64 | 9.95 |
| 2004 | 7244 | 976,973.23 | 1,016,337.78 | 1,348,521.06 | 699,979.88 | 1,360,223.70 | 746,720.38 | -559,320.00 | 5,589,436.02 | 36,344,700.00 | 7,504.50 | 15.38 |
| 2005 | 8331 | 1,351,726.85 | 1,406,191.11 | 1,865,794.65 | 968,482.63 | 1,881,986.99 | 974,950.56 | -559,320.00 | 7,889,812.78 | 36,344,700.00 | 7,076.39 | 21.70 |
| 2006 | 9581 | 1,860,433.32 | 1,935,394.55 | 2,567,963.61 | 1,332,959.65 | 2,590,250.60 | 1,173,376.35 | -559,320.00 | 10,901,058.08 | 36,344,700.00 | 6,054.33 | 29.99 |
| 2007 | 11018 | 2,615,174.81 | 2,720,546.36 | 3,609,735.29 | 1,873,715.38 | 3,641,064.74 | 1,425,667.77 | -559,320.00 | 15,326,584.35 | 36,344,700.00 | 3,712.09 | 42.17 |
| 2008 | 12670 | 3,778,165.30 | 3,930,396.47 | 5,215,013.94 | 2,706,972.54 | 5,260,277.19 | 1,609,095.02 | -559,320.00 | 21,940,600.46 | 36,344,700.00 | (1,016.40) | 60.37 |
| 2009 | 14571 | 5,668,561.81 | 5,896,961.51 | 7,824,332.73 | 4,061,400.17 | 7,892,245.07 | 1,810,224.96 | -559,320.00 | 32,594,406.24 | 36,344,700.00 | (10,279.55) | 89.71 |
| 2010 | 16756 | 9,000,853.67 | 9,363,519.25 | 12,423,902.70 | 6,448,914.17 | 12,531,740.03 | 2,028,548.82 | -559,320.00 | 51,238,158.64 | 36,344,700.00 | (28,967.39) | 141.09 |

Cuadro N° A.5.133

CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{er} CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 3.5%

TRAMO 2

(Cantidades de N\$ a febrero de 1995)

| Año | TPDAc | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.6% | 34.7% | 6.5% | 8.9% | 19.4% | | | | | | |
| 1995 | 2298 | 107,395.67 | 116,426.21 | 57,344.24 | 81,631.33 | 136,038.51 | 242,971.79 | -736,000.00 | 5,807.75 | 36,799,999.00 | 4,153.43 | 0.02 |
| 1996 | 2378 | 114,491.85 | 124,119.08 | 62,959.31 | 87,027.99 | 145,032.05 | 260,501.47 | -736,000.00 | 58,131.75 | 36,799,999.00 | 4,288.94 | 0.16 |
| 1997 | 2462 | 122,091.74 | 132,358.01 | 69,060.35 | 92,807.85 | 154,664.17 | 279,564.50 | -736,000.00 | 114,546.63 | 36,799,999.00 | 4,428.43 | 0.31 |
| 1998 | 2548 | 130,233.21 | 141,184.07 | 75,688.96 | 98,999.71 | 164,982.90 | 299,778.54 | -736,000.00 | 174,867.38 | 36,799,999.00 | 4,571.99 | 0.48 |
| 1999 | 2637 | 138,957.15 | 150,641.57 | 82,890.43 | 105,634.68 | 176,040.07 | 321,440.37 | -736,000.00 | 239,604.27 | 36,799,999.00 | 4,719.68 | 0.65 |
| 2000 | 2729 | 148,307.70 | 160,778.39 | 90,714.17 | 112,746.36 | 187,891.68 | 344,626.38 | -736,000.00 | 309,064.68 | 36,799,999.00 | 4,871.59 | 0.84 |
| 2001 | 2825 | 158,332.59 | 171,646.23 | 99,214.00 | 120,371.05 | 200,598.21 | 366,987.00 | -736,000.00 | 381,149.07 | 36,799,999.00 | 5,027.79 | 1.04 |
| 2002 | 2924 | 169,083.36 | 183,301.00 | 108,448.69 | 128,547.97 | 214,225.04 | 390,402.98 | -736,000.00 | 458,009.03 | 36,799,999.00 | 5,188.33 | 1.24 |
| 2003 | 3026 | 180,615.76 | 195,803.12 | 118,482.39 | 137,319.54 | 228,842.85 | 415,276.11 | -736,000.00 | 540,339.77 | 36,799,999.00 | 5,353.29 | 1.47 |
| 2004 | 3132 | 192,990.10 | 209,217.97 | 129,385.19 | 146,731.64 | 244,528.11 | 441,928.59 | -736,000.00 | 628,781.58 | 36,799,999.00 | 5,522.71 | 1.71 |
| 2005 | 3242 | 206,271.61 | 223,616.28 | 141,233.72 | 156,833.92 | 261,363.55 | 470,453.19 | -736,000.00 | 723,772.27 | 36,799,999.00 | 5,696.65 | 1.97 |
| 2006 | 3355 | 220,530.96 | 239,074.65 | 154,111.82 | 167,680.14 | 279,438.76 | 500,674.57 | -736,000.00 | 825,510.90 | 36,799,999.00 | 5,875.14 | 2.24 |
| 2007 | 3473 | 235,844.66 | 255,676.03 | 167,748.79 | 179,328.52 | 298,850.77 | 532,946.95 | -736,000.00 | 934,395.73 | 36,799,999.00 | 6,058.23 | 2.54 |
| 2008 | 3594 | 252,295.64 | 273,510.31 | 181,535.52 | 191,842.16 | 319,704.73 | 567,661.69 | -736,000.00 | 1,050,550.05 | 36,799,999.00 | 6,245.92 | 2.85 |
| 2009 | 3720 | 269,973.81 | 292,674.98 | 196,466.65 | 205,289.46 | 342,114.65 | 604,654.01 | -736,000.00 | 1,175,173.57 | 36,799,999.00 | 6,438.24 | 3.19 |
| 2010 | 3850 | 288,976.71 | 313,275.76 | 212,641.90 | 219,744.65 | 366,204.21 | 644,034.19 | -736,000.00 | 1,308,877.41 | 36,799,999.00 | 6,635.17 | 3.56 |

Cuadro N° A.5.134
CUADRO DE BENEFICIOS NETOS, COSTOS Y CÁLCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4° CARRIL
TASA DE CRECIMIENTO DEL TPDACDE 3.5%
TRAMO 2
(Cantidades de N\$ a febrero de 1995)

| Año | TPDac | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|-----------|----------|----------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.6% | 34.7% | 6.5% | 8.9% | 19.4% | | | | | | |
| 1995 | 2298 | 1,868.87 | 2,026.01 | 1,485.67 | 1,514.99 | 2,524.73 | 242,971.79 | -411,730.00 | -159,337.94 | 47,587,000.00 | 4482.72 | -0.33 |
| 1996 | 2378 | 2,002.53 | 2,170.92 | 1,592.05 | 1,619.97 | 2,699.68 | 260,501.47 | -411,730.00 | -141,143.40 | 47,587,000.00 | 4,639.93 | -0.30 |
| 1997 | 2462 | 2,145.77 | 2,326.20 | 1,706.06 | 1,732.35 | 2,886.96 | 279,564.50 | -411,730.00 | -121,368.15 | 47,587,000.00 | 4,802.67 | -0.26 |
| 1998 | 2548 | 2,299.28 | 2,492.62 | 1,828.27 | 1,852.67 | 3,087.47 | 299,778.54 | -411,730.00 | -100,391.15 | 47,587,000.00 | 4,971.12 | -0.21 |
| 1999 | 2637 | 2,463.81 | 2,670.98 | 1,959.25 | 1,981.49 | 3,302.15 | 321,440.37 | -411,730.00 | -77,911.96 | 47,587,000.00 | 5,145.50 | -0.16 |
| 2000 | 2729 | 2,640.13 | 2,862.13 | 2,099.65 | 2,119.41 | 3,532.00 | 344,626.38 | -411,730.00 | -53,850.30 | 47,587,000.00 | 5,326.01 | -0.11 |
| 2001 | 2825 | 2,829.10 | 3,066.99 | 2,250.14 | 2,267.10 | 3,778.12 | 366,987.00 | -411,730.00 | -30,551.57 | 47,587,000.00 | 5,512.86 | -0.06 |
| 2002 | 2924 | 3,031.63 | 3,286.55 | 2,411.45 | 2,425.24 | 4,041.66 | 390,402.98 | -411,730.00 | -6,130.49 | 47,587,000.00 | 5,706.29 | -0.01 |
| 2003 | 3026 | 3,248.70 | 3,521.87 | 2,584.37 | 2,594.59 | 4,323.88 | 415,276.11 | -411,730.00 | 19,819.50 | 47,587,000.00 | 5,906.52 | 0.04 |
| 2004 | 3132 | 3,481.35 | 3,774.09 | 2,769.73 | 2,775.94 | 4,626.10 | 441,928.59 | -411,730.00 | 47,625.79 | 47,587,000.00 | 6,113.80 | 0.10 |
| 2005 | 3242 | 3,730.72 | 4,044.42 | 2,968.43 | 2,970.16 | 4,949.77 | 470,453.19 | -411,730.00 | 77,386.69 | 47,587,000.00 | 6,328.37 | 0.16 |
| 2006 | 3355 | 3,997.99 | 4,334.17 | 3,181.44 | 3,178.18 | 5,296.43 | 500,674.57 | -411,730.00 | 108,932.77 | 47,587,000.00 | 6,550.49 | 0.23 |
| 2007 | 3473 | 4,284.48 | 4,644.75 | 3,409.80 | 3,400.97 | 5,667.71 | 532,946.95 | -411,730.00 | 142,624.65 | 47,587,000.00 | 6,780.43 | 0.30 |
| 2008 | 3594 | 4,591.56 | 4,977.65 | 3,654.61 | 3,639.60 | 6,065.39 | 567,661.69 | -411,730.00 | 178,860.50 | 47,587,000.00 | 7,018.47 | 0.38 |
| 2009 | 3720 | 4,920.72 | 5,334.49 | 3,917.08 | 3,895.22 | 6,491.37 | 604,654.01 | -411,730.00 | 217,482.88 | 47,587,000.00 | 7,264.89 | 0.46 |
| 2010 | 3850 | 5,273.56 | 5,716.99 | 4,198.47 | 4,169.03 | 6,947.68 | 644,034.19 | -411,730.00 | 258,609.93 | 47,587,000.00 | 7,519.98 | 0.54 |

Cuadro N° A.5.135

**CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDAC DE 3.5%**

TRAMO 2

(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI $\frac{4}{5+6}$ |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|------------------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.6% | 34.7% | 6.5% | 8.9% | 19.4% | | | | | | |
| 1995 | 2298 | 109,264.54 | 118,452.22 | 58,829.91 | 83,146.32 | 138,563.24 | 242,971.79 | -1,225,177.00 | -473,948.98 | 76,612,200.00 | 4141.33 | -0.62 |
| 1996 | 2378 | 116,494.38 | 126,289.99 | 64,551.36 | 88,647.96 | 147,731.73 | 260,501.47 | -1,225,177.00 | -420,960.11 | 76,612,200.00 | 4,275.98 | -0.55 |
| 1997 | 2462 | 124,237.51 | 134,684.22 | 70,766.41 | 94,540.20 | 157,551.14 | 279,564.50 | -1,225,177.00 | -363,833.02 | 76,612,200.00 | 4,414.55 | -0.47 |
| 1998 | 2548 | 132,532.49 | 143,676.69 | 77,517.22 | 100,852.38 | 168,070.37 | 299,778.54 | -1,225,177.00 | -302,749.30 | 76,612,200.00 | 4,557.12 | -0.40 |
| 1999 | 2637 | 141,420.95 | 153,312.55 | 84,849.69 | 107,616.17 | 179,342.22 | 321,440.37 | -1,225,177.00 | -237,195.06 | 76,612,200.00 | 4,703.76 | -0.31 |
| 2000 | 2729 | 150,947.83 | 163,640.51 | 92,813.82 | 114,865.77 | 191,423.68 | 344,626.38 | -1,225,177.00 | -166,859.01 | 76,612,200.00 | 4,854.54 | -0.22 |
| 2001 | 2825 | 161,161.69 | 174,713.22 | 101,464.14 | 122,638.15 | 204,376.33 | 366,987.00 | -1,225,177.00 | -93,836.49 | 76,612,200.00 | 5,009.53 | -0.12 |
| 2002 | 2924 | 172,114.99 | 186,587.54 | 110,860.14 | 130,973.21 | 218,266.70 | 390,402.98 | -1,225,177.00 | -15,971.44 | 76,612,200.00 | 5,168.77 | -0.02 |
| 2003 | 3026 | 183,864.46 | 199,324.99 | 121,066.76 | 139,914.12 | 233,166.72 | 415,276.11 | -1,225,177.00 | 67,436.16 | 76,612,200.00 | 5,332.34 | 0.09 |
| 2004 | 3132 | 196,471.45 | 212,992.05 | 132,154.91 | 149,507.58 | 249,154.21 | 441,928.59 | -1,225,177.00 | 157,031.79 | 76,612,200.00 | 5,500.27 | 0.20 |
| 2005 | 3242 | 210,002.33 | 227,660.70 | 144,202.14 | 159,804.09 | 266,313.32 | 470,453.19 | -1,225,177.00 | 253,258.77 | 76,612,200.00 | 5,672.61 | 0.33 |
| 2006 | 3355 | 224,528.96 | 243,408.82 | 157,293.26 | 170,858.32 | 284,735.19 | 500,674.57 | -1,225,177.00 | 356,322.11 | 76,612,200.00 | 5,849.40 | 0.47 |
| 2007 | 3473 | 240,129.14 | 260,320.77 | 171,158.59 | 182,729.49 | 304,518.48 | 532,946.95 | -1,225,177.00 | 466,626.43 | 76,612,200.00 | 6,030.65 | 0.61 |
| 2008 | 3594 | 256,887.20 | 278,487.96 | 185,190.13 | 195,481.76 | 325,770.12 | 567,661.69 | -1,225,177.00 | 584,301.86 | 76,612,200.00 | 6,216.38 | 0.76 |
| 2009 | 3720 | 274,894.53 | 298,009.46 | 200,383.73 | 209,184.68 | 348,606.02 | 604,654.01 | -1,225,177.00 | 710,555.44 | 76,612,200.00 | 6,406.59 | 0.93 |
| 2010 | 3850 | 294,250.27 | 318,992.75 | 216,840.37 | 223,913.68 | 373,151.89 | 644,034.19 | -1,225,177.00 | 846,006.15 | 76,612,200.00 | 6,601.27 | 1.10 |

Cuadro N° A.5.136

CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{er} CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 7%

TRAMO 2

(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.6% | 34.7% | 6.5% | 8.9% | 19.4% | | | | | | |
| 1995 | 2298 | 107,395.67 | 116,426.21 | 57,344.24 | 81,724.18 | 136,193.25 | 242,981.23 | -736,000.00 | 6,064.78 | 36,799,999.00 | 4153.17 | 0.02 |
| 1996 | 2459 | 114,425.69 | 124,047.35 | 68,849.10 | 87,073.76 | 145,108.32 | 278,850.62 | -736,000.00 | 82,354.84 | 36,800,000.00 | 4,423.45 | 0.22 |
| 1997 | 2631 | 121,876.77 | 132,124.96 | 82,392.45 | 92,743.76 | 154,557.37 | 319,963.78 | -736,000.00 | 167,659.09 | 36,800,001.00 | 4,709.43 | 0.46 |
| 1998 | 2815 | 129,768.01 | 140,679.75 | 98,333.59 | 98,748.70 | 164,564.60 | 364,708.52 | -736,000.00 | 260,803.16 | 36,800,002.00 | 5,011.69 | 0.71 |
| 1999 | 3012 | 138,118.31 | 149,732.20 | 117,098.56 | 105,102.98 | 175,154.00 | 411,882.98 | -736,000.00 | 361,089.04 | 36,800,003.00 | 5,330.74 | 0.98 |
| 2000 | 3223 | 146,946.18 | 159,302.37 | 139,193.74 | 111,820.66 | 186,349.00 | 465,496.00 | -736,000.00 | 473,107.96 | 36,800,004.00 | 5,667.04 | 1.29 |
| 2001 | 3449 | 156,269.37 | 169,409.52 | 165,125.66 | 118,915.27 | 198,172.16 | 526,452.74 | -736,000.00 | 598,344.73 | 36,800,005.00 | 6,020.93 | 1.63 |
| 2002 | 3690 | 166,104.61 | 180,071.77 | 192,882.24 | 126,399.53 | 210,644.67 | 595,787.54 | -736,000.00 | 735,890.37 | 36,800,006.00 | 6,392.63 | 2.00 |
| 2003 | 3948 | 176,467.14 | 191,305.65 | 225,366.71 | 134,285.03 | 223,785.85 | 674,682.59 | -736,000.00 | 889,892.96 | 36,800,007.00 | 6,782.18 | 2.42 |
| 2004 | 4225 | 187,370.21 | 203,125.52 | 263,431.08 | 142,581.87 | 237,612.52 | 738,628.14 | -736,000.00 | 1,036,749.34 | 36,800,008.00 | 7,179.49 | 2.82 |
| 2005 | 4521 | 198,824.53 | 215,543.00 | 308,096.11 | 151,298.19 | 252,138.26 | 767,832.85 | -736,000.00 | 1,157,732.96 | 36,800,009.00 | 7,590.44 | 3.15 |
| 2006 | 4837 | 210,837.55 | 228,566.15 | 360,589.30 | 160,439.66 | 267,372.51 | 795,821.75 | -736,000.00 | 1,287,626.93 | 36,800,010.00 | 8,014.42 | 3.50 |
| 2007 | 5176 | 223,412.61 | 242,198.61 | 422,392.86 | 170,008.82 | 283,319.50 | 822,037.33 | -736,000.00 | 1,427,369.74 | 36,800,011.00 | 8,449.39 | 3.88 |
| 2008 | 5538 | 236,547.99 | 256,438.50 | 495,304.80 | 180,004.37 | 299,977.07 | 820,619.56 | -736,000.00 | 1,552,892.28 | 36,800,012.00 | 8,892.57 | 4.22 |
| 2009 | 5926 | 250,235.76 | 271,277.21 | 599,729.10 | 190,420.25 | 317,335.13 | 659,001.39 | -736,000.00 | 1,551,998.84 | 36,800,013.00 | 9,340.25 | 4.22 |
| 2010 | 6340 | 264,460.38 | 286,697.94 | 727,196.74 | 201,244.67 | 335,374.01 | 454,327.94 | -736,000.00 | 1,533,301.69 | 36,800,014.00 | 9,787.47 | 4.17 |

Cuadro N° A.5.137
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4° CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 7%
TRAMO 2
(Cantidades de N\$ a febrero de 1995)

| Año | TPDac | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|-----------|-----------|-----------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.6% | 34.7% | 6.5% | 8.9% | 19.4% | | | | | | |
| 1995 | 2298 | 1,868.87 | 2,026.01 | 1,485.67 | 1,422.14 | 2,369.99 | 242,981.23 | -411,730.00 | -159,576.09 | 47,587,000.00 | 4482.83 | -0.34 |
| 1996 | 2459 | 2,140.85 | 2,320.86 | 1,702.14 | 1,629.11 | 2,714.90 | 278,850.62 | -411,730.00 | -122,371.52 | 47,587,000.00 | 4,797.28 | -0.26 |
| 1997 | 2631 | 2,452.50 | 2,658.73 | 1,950.25 | 1,866.27 | 3,110.13 | 319,963.78 | -411,730.00 | -79,728.34 | 47,587,000.00 | 5,133.84 | -0.17 |
| 1998 | 2815 | 2,809.65 | 3,045.90 | 2,234.65 | 2,138.04 | 3,563.04 | 364,708.52 | -411,730.00 | -33,230.21 | 47,587,000.00 | 5,494.06 | -0.07 |
| 1999 | 3012 | 3,218.94 | 3,489.61 | 2,560.66 | 2,449.50 | 4,082.08 | 411,882.98 | -411,730.00 | 15,953.78 | 47,587,000.00 | 5,879.63 | 0.03 |
| 2000 | 3223 | 3,688.04 | 3,998.15 | 2,934.42 | 2,806.46 | 4,676.96 | 465,496.00 | -411,730.00 | 71,870.04 | 47,587,000.00 | 6,292.32 | 0.15 |
| 2001 | 3449 | 4,225.71 | 4,581.03 | 3,362.95 | 3,215.61 | 5,358.81 | 526,452.74 | -411,730.00 | 135,466.84 | 47,587,000.00 | 6,734.07 | 0.28 |
| 2002 | 3690 | 4,842.03 | 5,249.18 | 3,854.33 | 3,684.61 | 6,140.39 | 595,787.54 | -411,730.00 | 207,828.08 | 47,587,000.00 | 7,206.93 | 0.44 |
| 2003 | 3948 | 5,548.57 | 6,015.13 | 4,417.83 | 4,222.26 | 7,036.38 | 674,682.59 | -411,730.00 | 290,192.76 | 47,587,000.00 | 7,713.09 | 0.61 |
| 2004 | 4225 | 6,358.60 | 6,893.27 | 5,064.14 | 4,838.66 | 8,063.62 | 738,628.14 | -411,730.00 | 358,116.43 | 47,587,000.00 | 8,254.94 | 0.75 |
| 2005 | 4521 | 7,287.37 | 7,900.14 | 5,805.49 | 5,545.42 | 9,241.44 | 767,832.85 | -411,730.00 | 391,882.72 | 47,587,000.00 | 8,834.99 | 0.82 |
| 2006 | 4837 | 8,352.41 | 9,054.74 | 6,655.98 | 6,355.88 | 10,592.07 | 795,821.75 | -411,730.00 | 425,102.82 | 47,587,000.00 | 9,455.97 | 0.89 |
| 2007 | 5176 | 9,573.84 | 10,378.87 | 7,631.82 | 7,285.34 | 12,141.01 | 822,037.33 | -411,730.00 | 457,318.22 | 47,587,000.00 | 10,120.78 | 0.96 |
| 2008 | 5538 | 10,974.79 | 11,897.62 | 8,751.66 | 8,351.42 | 13,917.62 | 820,619.56 | -411,730.00 | 462,782.68 | 47,587,000.00 | 10,832.55 | 0.97 |
| 2009 | 5926 | 12,581.86 | 13,639.82 | 10,036.96 | 9,574.33 | 15,955.62 | 936,049.81 | -411,730.00 | 586,108.40 | 47,587,000.00 | 11,594.62 | 1.23 |
| 2010 | 6340 | 14,425.62 | 15,638.62 | 11,512.42 | 10,977.37 | 18,293.77 | 1,067,962.47 | -411,730.00 | 727,080.26 | 47,587,000.00 | 12,410.59 | 1.53 |

Cuadro N° A.5.138
**CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDAC DE 7%**
TRAMO 2

(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI $\frac{4}{5+6}$ |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|------------------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.6% | 34.7% | 6.5% | 8.9% | 19.4% | | | | | | |
| 1995 | 2298 | 109,264.54 | 118,452.22 | 58,829.91 | 83,146.32 | 138,563.24 | 242,981.23 | -1,225,177.00 | -473,939.54 | 76,612,200.00 | 4141.33 | -0.62 |
| 1996 | 2459 | 116,566.54 | 126,368.21 | 70,551.24 | 88,702.87 | 147,823.23 | 278,850.62 | -1,225,177.00 | -396,314.30 | 76,612,200.00 | 4,409.88 | -0.52 |
| 1997 | 2631 | 124,329.27 | 134,783.69 | 84,342.70 | 94,610.03 | 157,667.50 | 319,963.78 | -1,225,177.00 | -309,480.03 | 76,612,200.00 | 4,693.88 | -0.40 |
| 1998 | 2815 | 132,577.65 | 143,725.65 | 100,568.24 | 100,886.74 | 168,127.64 | 364,708.52 | -1,225,177.00 | -214,582.56 | 76,612,200.00 | 4,993.87 | -0.28 |
| 1999 | 3012 | 141,337.26 | 153,221.82 | 119,659.22 | 107,552.48 | 179,236.08 | 411,882.98 | -1,225,177.00 | -112,287.16 | 76,612,200.00 | 5,310.33 | -0.15 |
| 2000 | 3223 | 150,634.21 | 163,300.53 | 142,128.16 | 114,627.12 | 191,025.97 | 465,496.00 | -1,225,177.00 | 2,035.00 | 76,612,200.00 | 5,643.64 | 0.00 |
| 2001 | 3449 | 160,495.08 | 173,990.56 | 168,488.61 | 122,130.88 | 203,530.97 | 526,452.74 | -1,225,177.00 | 129,911.84 | 76,612,200.00 | 5,994.12 | 0.17 |
| 2002 | 3690 | 170,946.64 | 185,320.95 | 196,736.57 | 130,084.14 | 216,785.06 | 595,787.54 | -1,225,177.00 | 270,483.91 | 76,612,200.00 | 6,361.90 | 0.35 |
| 2003 | 3948 | 182,015.70 | 197,320.77 | 229,784.54 | 138,507.29 | 230,822.23 | 674,682.59 | -1,225,177.00 | 427,956.13 | 76,612,200.00 | 6,746.97 | 0.56 |
| 2004 | 4225 | 193,728.81 | 210,018.79 | 268,495.21 | 147,420.53 | 245,676.14 | 738,628.14 | -1,225,177.00 | 578,790.63 | 76,612,200.00 | 7,139.13 | 0.76 |
| 2005 | 4521 | 206,111.91 | 223,443.14 | 313,901.60 | 156,843.62 | 261,379.71 | 767,832.85 | -1,225,177.00 | 704,335.83 | 76,612,200.00 | 7,544.18 | 0.92 |
| 2006 | 4837 | 219,189.96 | 237,620.89 | 367,245.28 | 166,795.54 | 277,964.57 | 795,821.75 | -1,225,177.00 | 839,461.00 | 76,612,200.00 | 7,961.39 | 1.10 |
| 2007 | 5176 | 232,986.45 | 252,577.48 | 430,024.68 | 177,294.16 | 295,460.52 | 822,037.33 | -1,225,177.00 | 985,203.63 | 76,612,200.00 | 8,388.60 | 1.29 |
| 2008 | 5538 | 247,522.79 | 268,336.12 | 504,056.46 | 188,355.78 | 313,894.69 | 820,619.56 | -1,225,177.00 | 1,117,608.40 | 76,612,200.00 | 8,822.88 | 1.46 |
| 2009 | 5926 | 262,817.61 | 284,917.04 | 609,766.06 | 199,994.59 | 333,290.74 | 936,049.81 | -1,225,177.00 | 1,401,658.85 | 76,612,200.00 | 9,260.34 | 1.83 |
| 2010 | 6340 | 278,886.00 | 302,336.56 | 738,709.16 | 212,222.04 | 353,667.78 | 1,067,962.47 | -1,225,177.00 | 1,728,607.01 | 76,612,200.00 | 9,695.84 | 2.26 |

Cuadro N° A.5.139

CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{er} CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 10%

TRAMO 2

(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|--------------|--------------|--------------|--------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.6% | 34.7% | 6.5% | 8.9% | 19.4% | | | | | | |
| 1995 | 2298 | 99,879.35 | 108,277.86 | 51,244.84 | 76,004.53 | 126,661.46 | 242,981.23 | -736,000.00 | -30,950.75 | 36,799,999.00 | 4201.01 | -0.08 |
| 1996 | 2528 | 119,207.02 | 129,230.72 | 66,724.81 | 90,712.18 | 151,171.74 | 294,978.65 | -736,000.00 | 116,025.12 | 36,799,999.00 | 4,596.37 | 0.32 |
| 1997 | 2781 | 142,606.48 | 154,597.77 | 86,260.10 | 108,518.32 | 180,845.65 | 356,725.03 | -736,000.00 | 293,553.35 | 36,799,999.00 | 5,025.50 | 0.80 |
| 1998 | 3059 | 170,998.21 | 185,376.86 | 110,910.06 | 130,123.38 | 216,850.46 | 423,409.83 | -736,000.00 | 501,668.80 | 36,799,999.00 | 5,490.40 | 1.36 |
| 1999 | 3365 | 205,526.39 | 222,808.39 | 142,028.70 | 156,398.06 | 260,637.18 | 503,275.70 | -736,000.00 | 754,674.43 | 36,799,999.00 | 5,992.84 | 2.05 |
| 2000 | 3701 | 247,618.31 | 268,439.68 | 178,187.84 | 188,428.47 | 314,015.83 | 599,008.37 | -736,000.00 | 1,059,698.50 | 36,799,999.00 | 6,534.35 | 2.88 |
| 2001 | 4071 | 300,237.69 | 325,483.64 | 222,407.88 | 228,469.90 | 380,744.81 | 713,849.39 | -736,000.00 | 1,435,193.32 | 36,799,999.00 | 7,112.20 | 3.90 |
| 2002 | 4478 | 368,826.25 | 399,839.58 | 277,863.03 | 280,663.28 | 467,725.03 | 763,830.12 | -736,000.00 | 1,822,747.29 | 36,799,999.00 | 7,716.58 | 4.95 |
| 2003 | 4926 | 453,916.57 | 492,084.84 | 347,625.96 | 345,413.90 | 575,631.85 | 803,087.94 | -736,000.00 | 2,281,761.06 | 36,799,999.00 | 8,354.12 | 6.20 |
| 2004 | 5419 | 559,794.29 | 606,865.45 | 435,715.18 | 425,982.96 | 709,900.11 | 838,475.25 | -736,000.00 | 2,840,733.25 | 36,799,999.00 | 9,020.49 | 7.72 |
| 2005 | 5961 | 691,985.16 | 750,171.80 | 567,572.99 | 526,575.38 | 877,537.25 | 643,022.06 | -736,000.00 | 3,320,864.64 | 36,799,999.00 | 9,708.51 | 9.02 |
| 2006 | 6557 | 857,668.41 | 929,786.78 | 748,742.52 | 652,654.27 | 1,087,647.58 | 334,630.19 | -736,000.00 | 3,875,129.75 | 36,799,999.00 | 10,406.98 | 10.53 |
| 2007 | 7212 | 1,117,022.07 | 1,210,948.60 | 988,840.18 | 850,012.92 | 1,416,545.53 | -82,866.61 | -736,000.00 | 4,764,502.69 | 36,799,999.00 | 10,937.60 | 12.94 |
| 2008 | 7933 | 1,480,221.05 | 1,604,687.72 | 1,310,181.99 | 1,126,394.04 | 1,877,134.36 | -636,814.66 | -736,000.00 | 6,025,804.51 | 36,799,999.00 | 11,282.63 | 16.37 |
| 2009 | 8727 | 1,963,006.71 | 2,128,069.15 | 1,571,297.52 | 1,493,776.26 | 2,489,376.39 | -1,174,662.22 | -736,000.00 | 7,734,863.82 | 36,799,999.00 | 11,408.53 | 21.01 |
| 2010 | 9599 | 2,611,312.25 | 2,830,888.46 | 1,822,200.14 | 1,987,113.05 | 3,311,521.57 | -1,738,574.15 | -736,000.00 | 10,088,461.32 | 36,799,999.00 | 11,187.81 | 27.41 |

Cuadro N° A.5.140
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4°. CARRIL
TASA DE CRECIMIENTO DEL TPDACDE 10%
TRAMO 2
(Cantidades de N\$ a febrero de 1995)

| Año | TPDac | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.6% | 34.7% | 6.5% | 8.9% | 19.4% | | | | | | |
| 1995 | 2298 | 9,385.19 | 10,174.36 | 7,585.08 | 7,141.79 | 11,901.78 | 242,981.23 | -411,730.00 | -122,560.57 | 47,587,000.00 | 4458.93 | -0.26 |
| 1996 | 2528 | 11,371.12 | 12,327.28 | 9,193.61 | 8,653.00 | 14,420.22 | 294,978.65 | -411,730.00 | -60,786.12 | 47,587,000.00 | 4,903.11 | -0.13 |
| 1997 | 2781 | 13,779.11 | 14,937.74 | 11,145.18 | 10,485.40 | 17,473.90 | 356,725.03 | -411,730.00 | 12,816.37 | 47,587,000.00 | 5,391.34 | 0.03 |
| 1998 | 3059 | 16,699.48 | 18,103.68 | 13,513.61 | 12,707.69 | 21,177.35 | 423,409.83 | -411,730.00 | 93,881.64 | 47,587,000.00 | 5,927.94 | 0.20 |
| 1999 | 3365 | 20,242.08 | 21,944.17 | 16,388.78 | 15,403.48 | 25,669.89 | 503,275.70 | -411,730.00 | 191,194.10 | 47,587,000.00 | 6,517.65 | 0.40 |
| 2000 | 3701 | 24,540.60 | 26,604.13 | 19,880.29 | 18,674.50 | 31,121.03 | 599,008.37 | -411,730.00 | 308,098.92 | 47,587,000.00 | 7,165.67 | 0.65 |
| 2001 | 4071 | 29,757.80 | 32,260.03 | 24,121.81 | 22,644.59 | 37,737.19 | 713,849.39 | -411,730.00 | 448,640.80 | 47,587,000.00 | 7,877.66 | 0.94 |
| 2002 | 4478 | 36,091.99 | 39,126.84 | 29,276.54 | 27,464.68 | 45,769.86 | 763,830.12 | -411,730.00 | 529,830.04 | 47,587,000.00 | 8,659.86 | 1.11 |
| 2003 | 4926 | 43,784.98 | 47,466.71 | 35,543.90 | 33,318.77 | 55,525.69 | 803,087.94 | -411,730.00 | 606,997.98 | 47,587,000.00 | 9,519.04 | 1.28 |
| 2004 | 5419 | 53,131.79 | 57,599.46 | 43,167.82 | 40,431.35 | 67,378.80 | 838,475.25 | -411,730.00 | 688,454.48 | 47,587,000.00 | 10,462.64 | 1.45 |
| 2005 | 5961 | 64,492.74 | 69,915.71 | 52,446.98 | 49,076.61 | 81,786.12 | 1,020,261.50 | -411,730.00 | 926,249.65 | 47,587,000.00 | 11,498.76 | 1.95 |
| 2006 | 6557 | 78,308.23 | 84,892.89 | 63,747.59 | 59,589.69 | 99,306.15 | 1,220,941.96 | -411,730.00 | 1,195,056.52 | 47,587,000.00 | 12,636.22 | 2.51 |
| 2007 | 7212 | 95,117.17 | 103,115.24 | 77,519.21 | 72,380.68 | 120,622.32 | 1,466,071.87 | -411,730.00 | 1,523,096.49 | 47,587,000.00 | 13,884.64 | 3.20 |
| 2008 | 7933 | 115,579.74 | 125,298.44 | 94,314.58 | 87,951.95 | 146,571.83 | 1,765,143.27 | -411,730.00 | 1,923,129.81 | 47,587,000.00 | 15,254.46 | 4.04 |
| 2009 | 8727 | 140,505.70 | 152,320.34 | 114,814.41 | 106,919.70 | 178,181.55 | 2,045,502.81 | -411,730.00 | 2,326,514.51 | 47,587,000.00 | 16,757.02 | 4.89 |
| 2010 | 9599 | 170,889.65 | 185,259.17 | 139,858.54 | 130,040.77 | 216,712.79 | 2,320,544.52 | -411,730.00 | 2,751,575.45 | 47,587,000.00 | 18,404.57 | 5.78 |

Cuadro N° A.5.141
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDAC DE 10%
TRAMO 2
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAc | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|--------------|--------------|--------------|--------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.6% | 34.7% | 6.5% | 8.9% | 19.4% | | | | | | |
| 1995 | 2298 | 109,264.54 | 118,452.22 | 58,829.91 | 83,146.32 | 138,563.24 | 242,981.23 | -1,225,177.00 | -473,939.54 | 76,612,200.00 | 4141.33 | -0.62 |
| 1996 | 2528 | 130,578.14 | 141,558.00 | 75,918.42 | 99,365.18 | 165,591.96 | 294,978.65 | -1,225,177.00 | -317,186.65 | 76,612,200.00 | 4,524.05 | -0.41 |
| 1997 | 2781 | 156,385.59 | 169,535.52 | 97,405.29 | 119,003.71 | 198,319.55 | 356,725.03 | -1,225,177.00 | -127,802.31 | 76,612,200.00 | 4,937.87 | -0.17 |
| 1998 | 3059 | 187,697.69 | 203,480.54 | 124,423.67 | 142,831.07 | 238,027.81 | 423,409.83 | -1,225,177.00 | 94,693.61 | 76,612,200.00 | 5,384.19 | 0.12 |
| 1999 | 3365 | 225,768.47 | 244,752.56 | 158,417.48 | 171,801.54 | 286,307.07 | 503,275.70 | -1,225,177.00 | 365,145.83 | 76,612,200.00 | 5,864.11 | 0.48 |
| 2000 | 3701 | 272,158.91 | 295,043.81 | 198,068.12 | 207,102.97 | 345,136.85 | 599,008.37 | -1,225,177.00 | 691,342.04 | 76,612,200.00 | 6,378.28 | 0.90 |
| 2001 | 4071 | 329,995.49 | 357,743.67 | 246,529.69 | 251,114.49 | 418,482.00 | 713,849.39 | -1,225,177.00 | 1,092,537.73 | 76,612,200.00 | 6,922.95 | 1.43 |
| 2002 | 4478 | 404,918.24 | 438,966.42 | 307,139.57 | 308,127.96 | 513,494.89 | 763,830.12 | -1,225,177.00 | 1,511,300.21 | 76,612,200.00 | 7,487.05 | 1.97 |
| 2003 | 4926 | 497,701.55 | 539,551.55 | 383,169.86 | 378,732.66 | 631,157.54 | 803,087.94 | -1,225,177.00 | 2,008,224.10 | 76,612,200.00 | 8,075.66 | 2.62 |
| 2004 | 5419 | 612,926.08 | 664,464.92 | 478,883.00 | 466,414.32 | 777,278.91 | 838,475.25 | -1,225,177.00 | 2,613,265.48 | 76,612,200.00 | 8,682.58 | 3.41 |
| 2005 | 5961 | 756,477.90 | 820,087.51 | 620,019.97 | 575,651.99 | 959,323.37 | 1,020,261.50 | -1,225,177.00 | 3,526,645.24 | 76,612,200.00 | 9,298.35 | 4.60 |
| 2006 | 6557 | 935,976.64 | 1,014,679.67 | 812,490.11 | 712,243.96 | 1,186,953.73 | 1,220,941.96 | -1,225,177.00 | 4,658,109.07 | 76,612,200.00 | 9,908.97 | 6.08 |
| 2007 | 7212 | 1,212,139.24 | 1,314,063.84 | 1,066,359.39 | 922,393.60 | 1,537,167.85 | 1,466,071.87 | -1,225,177.00 | 6,293,018.79 | 76,612,200.00 | 10,332.68 | 8.21 |
| 2008 | 7933 | 1,595,800.79 | 1,729,986.16 | 1,404,496.57 | 1,214,346.00 | 2,023,706.18 | 1,765,143.27 | -1,225,177.00 | 8,508,301.97 | 76,612,200.00 | 10,547.58 | 11.10 |
| 2009 | 8727 | 2,103,512.41 | 2,280,389.49 | 1,686,111.94 | 1,600,695.96 | 2,667,557.94 | 2,045,502.81 | -1,225,177.00 | 11,158,593.55 | 76,612,200.00 | 10,514.95 | 14.56 |
| 2010 | 9599 | 2,782,201.90 | 3,016,147.64 | 1,962,058.68 | 2,117,153.82 | 3,528,234.37 | 2,320,544.52 | -1,225,177.00 | 14,501,163.93 | 76,612,200.00 | 10,101.00 | 18.93 |

Cuadro N° A.5.142
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{er} CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 15%
TRAMO 2
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|--------------|---------------|--------------|---------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.6% | 34.7% | 6.5% | 8.9% | 19.4% | | | | | | |
| 1995 | 2298 | 99,879.35 | 108,277.86 | 51,244.84 | 76,004.53 | 126,661.46 | 242,981.23 | -736,000.00 | -30,950.75 | 36,799,999.00 | 4201.01 | -0.08 |
| 1996 | 2643 | 129,562.26 | 140,456.71 | 75,272.80 | 98,592.14 | 164,303.69 | 322,865.95 | -736,000.00 | 195,053.55 | 36,799,999.00 | 4,792.18 | 0.53 |
| 1997 | 3039 | 168,911.50 | 183,114.69 | 109,067.27 | 128,535.47 | 214,204.21 | 418,541.23 | -736,000.00 | 486,374.37 | 36,799,999.00 | 5,457.99 | 1.32 |
| 1998 | 3495 | 221,330.32 | 239,941.22 | 156,010.99 | 168,424.27 | 280,678.85 | 539,419.05 | -736,000.00 | 869,804.69 | 36,799,999.00 | 6,204.24 | 2.36 |
| 1999 | 4019 | 258,557.19 | 280,298.37 | 215,867.55 | 196,752.56 | 327,887.91 | 697,164.71 | -736,000.00 | 1,240,528.29 | 36,799,999.00 | 7,140.24 | 3.37 |
| 2000 | 4622 | 331,633.25 | 359,519.15 | 299,258.51 | 252,360.77 | 420,558.93 | 777,185.41 | -736,000.00 | 1,704,516.02 | 36,799,999.00 | 8,126.37 | 4.63 |
| 2001 | 5316 | 433,038.41 | 469,451.11 | 416,241.70 | 329,526.38 | 549,155.33 | 831,741.20 | -736,000.00 | 2,293,154.13 | 36,799,999.00 | 9,213.15 | 6.23 |
| 2002 | 6113 | 566,963.42 | 614,637.42 | 610,766.24 | 431,438.41 | 718,991.61 | 576,984.13 | -736,000.00 | 2,783,781.24 | 36,799,999.00 | 10,418.55 | 7.56 |
| 2003 | 7030 | 744,620.07 | 807,232.59 | 917,377.47 | 566,628.62 | 944,285.93 | 41,561.83 | -736,000.00 | 3,285,706.52 | 36,799,999.00 | 11,743.79 | 8.93 |
| 2004 | 8084 | 981,512.97 | 1,064,045.00 | 1,385,868.44 | 746,895.45 | 1,244,700.39 | -765,147.91 | -736,000.00 | 3,921,874.36 | 36,799,999.00 | 13,183.21 | 10.65 |
| 2005 | 9297 | 1,354,154.69 | 1,468,020.87 | 1,922,248.27 | 1,030,462.16 | 1,717,263.98 | -1,533,825.90 | -736,000.00 | 5,222,324.07 | 36,799,999.00 | 14,545.40 | 14.19 |
| 2006 | 10691 | 1,942,446.61 | 2,105,780.23 | 2,650,840.11 | 1,478,130.78 | 2,463,303.21 | -2,129,088.18 | -736,000.00 | 7,775,412.75 | 36,799,999.00 | 15,638.22 | 21.12 |
| 2007 | 12295 | 2,790,983.91 | 3,025,668.09 | 3,737,888.72 | 2,123,836.61 | 3,539,371.22 | -2,757,263.45 | -736,000.00 | 11,724,485.12 | 36,799,999.00 | 16,394.26 | 31.85 |
| 2008 | 14139 | 3,980,518.71 | 4,315,226.76 | 5,424,283.76 | 3,029,029.06 | 5,047,873.38 | -3,573,131.75 | -736,000.00 | 17,487,799.91 | 36,799,999.00 | 16,646.60 | 47.50 |
| 2009 | 16260 | 5,890,109.44 | 6,385,388.37 | 8,187,184.51 | 4,482,157.71 | 7,469,510.58 | -4,641,115.21 | -736,000.00 | 27,037,235.40 | 36,799,999.00 | 15,299.27 | 73.44 |
| 2010 | 18699 | 8,745,019.06 | 9,480,357.47 | 13,101,218.45 | 6,654,639.44 | 11,089,948.85 | -6,040,870.61 | -736,000.00 | 42,294,312.66 | 36,799,999.00 | 11,770.13 | 114.89 |

Cuadro N° A.5.143
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4° CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 15%
TRAMO 2
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.6% | 34.7% | 6.5% | 8.9% | 19.4% | | | | | | |
| 1995 | 2298 | 9,385.19 | 10,174.36 | 7,585.08 | 7,141.79 | 11,901.78 | 242,981.23 | -411,730.00 | -122,560.57 | 47,587,000.00 | 4458.93 | -0.26 |
| 1996 | 2643 | 12,436.58 | 13,482.33 | 10,056.97 | 9,463.78 | 15,771.38 | 322,865.95 | -411,730.00 | -27,653.01 | 47,587,000.00 | 5,125.08 | -0.06 |
| 1997 | 3039 | 16,485.01 | 17,871.18 | 13,339.62 | 12,544.49 | 20,905.38 | 418,541.23 | -411,730.00 | 87,956.90 | 47,587,000.00 | 5,890.26 | 0.18 |
| 1998 | 3495 | 21,858.89 | 23,696.93 | 17,701.70 | 16,633.82 | 27,720.24 | 539,419.05 | -411,730.00 | 235,300.62 | 47,587,000.00 | 6,769.02 | 0.49 |
| 1999 | 4019 | 28,996.19 | 31,434.38 | 23,502.38 | 22,065.04 | 36,771.36 | 697,164.71 | -411,730.00 | 428,204.05 | 47,587,000.00 | 7,778.00 | 0.90 |
| 2000 | 4622 | 38,481.71 | 41,717.50 | 31,222.63 | 29,283.17 | 48,800.37 | 777,185.41 | -411,730.00 | 554,960.79 | 47,587,000.00 | 8,936.18 | 1.17 |
| 2001 | 5316 | 51,097.49 | 55,394.10 | 41,507.68 | 38,883.32 | 64,799.01 | 831,741.20 | -411,730.00 | 671,692.79 | 47,587,000.00 | 10,265.18 | 1.41 |
| 2002 | 6113 | 67,891.08 | 73,599.81 | 55,225.07 | 51,662.63 | 86,095.71 | 1,124,661.77 | -411,730.00 | 1,047,406.06 | 47,587,000.00 | 11,789.64 | 2.20 |
| 2003 | 7030 | 90,268.41 | 97,858.77 | 73,544.20 | 68,690.96 | 114,473.40 | 1,457,848.69 | -411,730.00 | 1,490,954.43 | 47,587,000.00 | 13,537.49 | 3.13 |
| 2004 | 8084 | 120,120.67 | 130,221.20 | 98,045.93 | 91,407.43 | 152,330.38 | 1,903,672.12 | -411,730.00 | 2,084,067.73 | 47,587,000.00 | 15,540.34 | 4.38 |
| 2005 | 9297 | 159,998.40 | 173,452.11 | 130,874.69 | 121,752.93 | 202,901.11 | 2,307,098.19 | -411,730.00 | 2,684,347.43 | 47,587,000.00 | 17,833.86 | 5.64 |
| 2006 | 10691 | 213,351.76 | 231,291.78 | 174,950.81 | 162,352.88 | 270,560.89 | 2,795,134.05 | -411,730.00 | 3,435,912.17 | 47,587,000.00 | 20,458.05 | 7.22 |
| 2007 | 12295 | 284,864.17 | 308,817.41 | 234,269.45 | 216,771.21 | 361,248.96 | 3,200,781.94 | -411,730.00 | 4,195,023.15 | 47,587,000.00 | 23,457.51 | 8.81 |
| 2008 | 14139 | 380,918.86 | 412,949.01 | 314,325.38 | 289,865.31 | 483,060.21 | 3,607,757.64 | -411,730.00 | 5,077,146.41 | 47,587,000.00 | 26,881.51 | 10.66 |
| 2009 | 16260 | 510,256.87 | 553,162.61 | 422,722.76 | 388,286.81 | 647,079.51 | 4,052,191.52 | -411,730.00 | 6,161,970.08 | 47,587,000.00 | 30,783.84 | 12.94 |
| 2010 | 18699 | 684,913.58 | 742,505.59 | 570,061.46 | 521,194.16 | 868,569.47 | 4,532,095.14 | -411,730.00 | 7,507,609.39 | 47,587,000.00 | 35,222.12 | 15.76 |

Cuadro N° A.5.144
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDAC DE 15%
TRAMO 2
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|---------------|---------------|--------------|---------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 30.6% | 34.7% | 6.5% | 8.9% | 19.4% | | | | | | |
| 1995 | 2298 | 109,264.54 | 118,452.22 | 58,829.91 | 83,146.32 | 138,563.24 | 242,981.23 | -1,225,177.00 | -473,939.54 | 76,612,200.00 | 4141.33 | -0.62 |
| 1996 | 2643 | 141,998.84 | 153,939.03 | 85,329.77 | 108,055.92 | 180,075.07 | 322,865.95 | -1,225,177.00 | -232,912.42 | 76,612,200.00 | 4,713.09 | -0.30 |
| 1997 | 3039 | 185,396.51 | 200,985.86 | 122,406.88 | 141,079.96 | 235,109.59 | 418,541.23 | -1,225,177.00 | 78,343.04 | 76,612,200.00 | 5,353.15 | 0.10 |
| 1998 | 3495 | 243,189.21 | 263,638.15 | 173,712.68 | 185,058.09 | 308,399.09 | 539,419.05 | -1,225,177.00 | 488,239.26 | 76,612,200.00 | 6,065.23 | 0.64 |
| 1999 | 4019 | 287,553.38 | 311,732.75 | 239,369.93 | 218,817.60 | 364,659.27 | 697,164.71 | -1,225,177.00 | 894,120.64 | 76,612,200.00 | 6,955.83 | 1.17 |
| 2000 | 4622 | 370,114.96 | 401,236.65 | 330,481.14 | 281,643.94 | 469,359.30 | 777,185.41 | -1,225,177.00 | 1,404,844.40 | 76,612,200.00 | 7,881.63 | 1.83 |
| 2001 | 5316 | 484,135.90 | 524,845.21 | 457,749.38 | 368,409.70 | 613,954.34 | 831,741.20 | -1,225,177.00 | 2,055,658.73 | 76,612,200.00 | 8,888.19 | 2.68 |
| 2002 | 6113 | 634,854.50 | 688,237.22 | 665,991.31 | 483,101.04 | 805,087.32 | 1,124,661.77 | -1,225,177.00 | 3,176,756.17 | 76,612,200.00 | 9,986.78 | 4.15 |
| 2003 | 7030 | 834,888.48 | 905,091.36 | 990,921.67 | 635,319.58 | 1,058,759.33 | 1,457,848.69 | -1,225,177.00 | 4,657,652.11 | 76,612,200.00 | 11,169.71 | 6.08 |
| 2004 | 8084 | 1,101,633.64 | 1,194,266.20 | 1,483,914.37 | 838,302.88 | 1,397,030.77 | 1,903,672.12 | -1,225,177.00 | 6,693,642.99 | 76,612,200.00 | 12,419.28 | 8.74 |
| 2005 | 9297 | 1,514,153.09 | 1,641,472.98 | 2,053,122.96 | 1,152,215.08 | 1,920,165.09 | 2,307,098.19 | -1,225,177.00 | 9,363,050.39 | 76,612,200.00 | 13,527.86 | 12.22 |
| 2006 | 10691 | 2,155,798.37 | 2,337,072.00 | 2,825,790.92 | 1,640,483.66 | 2,733,864.10 | 2,795,134.05 | -1,225,177.00 | 13,262,966.10 | 76,612,200.00 | 14,281.37 | 17.31 |
| 2007 | 12295 | 3,075,848.08 | 3,334,485.51 | 3,972,158.18 | 2,340,607.82 | 3,900,620.19 | 3,200,781.94 | -1,225,177.00 | 18,599,324.71 | 76,612,200.00 | 14,582.61 | 24.27 |
| 2008 | 14139 | 4,361,437.58 | 4,728,175.78 | 5,738,609.13 | 3,318,894.37 | 5,530,933.58 | 3,607,757.64 | -1,225,177.00 | 26,060,631.08 | 76,612,200.00 | 14,224.07 | 34.01 |
| 2009 | 16260 | 6,400,366.32 | 6,938,550.98 | 8,609,907.27 | 4,870,444.52 | 8,116,590.09 | 4,052,191.52 | -1,225,177.00 | 37,762,873.69 | 76,612,200.00 | 12,054.19 | 49.28 |
| 2010 | 18699 | 9,429,932.64 | 10,222,863.06 | 13,671,279.91 | 7,175,833.61 | 11,958,518.31 | 4,532,095.14 | -1,225,177.00 | 55,765,345.66 | 76,612,200.00 | 7,414.29 | 72.78 |

Cuadro N° A.5.145
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{er}. CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 3.5%
TRAMO 3
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAc | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI $\frac{4}{5+6}$ |
|------|-------|------------------------------------|------------|-----------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|------------------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 53,108.58 | 58,378.57 | 1,312.16 | 38,471.49 | 60,349.49 | 139,819.54 | -240,000.00 | 111,439.84 | 12,000,000.00 | 5445.67 | 0.93 |
| 1996 | 3147 | 54,967.38 | 60,421.82 | 1,406.05 | 39,817.99 | 62,461.72 | 148,752.17 | -240,000.00 | 127,827.13 | 12,000,000.00 | 5,630.33 | 1.06 |
| 1997 | 3257 | 58,650.95 | 64,470.91 | 1,506.70 | 42,486.00 | 66,646.99 | 158,399.22 | -240,000.00 | 152,160.78 | 12,000,000.00 | 5,811.58 | 1.27 |
| 1998 | 3371 | 62,599.48 | 68,811.26 | 1,614.57 | 45,345.92 | 71,133.29 | 168,619.11 | -240,000.00 | 178,123.64 | 12,000,000.00 | 5,997.95 | 1.48 |
| 1999 | 3489 | 66,833.21 | 73,465.10 | 1,730.18 | 48,412.39 | 75,943.60 | 179,530.70 | -240,000.00 | 205,915.18 | 12,000,000.00 | 6,189.51 | 1.72 |
| 2000 | 3611 | 71,373.98 | 78,456.46 | 1,854.09 | 51,701.25 | 81,102.76 | 191,168.44 | -240,000.00 | 235,656.99 | 12,000,000.00 | 6,386.33 | 1.96 |
| 2001 | 3738 | 76,245.46 | 83,811.34 | 1,986.91 | 55,229.61 | 86,637.64 | 203,567.97 | -240,000.00 | 267,478.94 | 12,000,000.00 | 6,588.48 | 2.23 |
| 2002 | 3868 | 81,473.23 | 89,557.86 | 2,129.28 | 59,016.02 | 92,577.30 | 216,869.19 | -240,000.00 | 301,622.89 | 12,000,000.00 | 6,796.03 | 2.51 |
| 2003 | 4004 | 87,085.00 | 95,726.48 | 2,281.88 | 63,080.53 | 98,953.22 | 231,013.50 | -240,000.00 | 338,140.61 | 12,000,000.00 | 7,009.01 | 2.82 |
| 2004 | 4144 | 93,110.75 | 102,350.18 | 2,445.45 | 67,444.87 | 105,799.48 | 243,680.01 | -240,000.00 | 374,830.73 | 12,000,000.00 | 7,227.47 | 3.12 |
| 2005 | 4289 | 99,583.00 | 109,464.67 | 2,620.79 | 72,132.58 | 113,153.00 | 248,711.04 | -240,000.00 | 405,665.09 | 12,000,000.00 | 7,451.43 | 3.38 |
| 2006 | 4439 | 106,536.99 | 117,108.71 | 2,808.75 | 77,169.18 | 121,053.83 | 253,667.06 | -240,000.00 | 438,344.52 | 12,000,000.00 | 7,680.90 | 3.65 |
| 2007 | 4594 | 114,010.94 | 125,324.30 | 3,010.24 | 82,582.36 | 129,545.38 | 258,522.78 | -240,000.00 | 472,996.01 | 12,000,000.00 | 7,915.98 | 3.94 |
| 2008 | 4755 | 122,022.03 | 134,130.33 | 3,226.24 | 88,384.56 | 138,647.17 | 263,280.76 | -240,000.00 | 509,691.08 | 12,000,000.00 | 8,154.12 | 4.24 |
| 2009 | 4922 | 131,342.39 | 144,375.56 | 3,457.80 | 95,134.95 | 149,236.38 | 267,881.65 | -240,000.00 | 551,428.74 | 12,000,000.00 | 8,393.35 | 4.59 |
| 2010 | 5094 | 141,403.43 | 155,434.96 | 3,706.06 | 102,421.76 | 160,667.07 | 272,347.21 | -240,000.00 | 595,980.49 | 12,000,000.00 | 8,637.12 | 4.96 |

Cuadro N° A.5.146

**CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4° CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 3.5%**

TRAMO 3

(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|-----------|----------|----------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 992.40 | 1,090.88 | 1,311.67 | 708.63 | 1,111.61 | 139,819.54 | -134,259.00 | 10,775.72 | 15,517,500.00 | 5933.63 | 0.07 |
| 1996 | 3147 | 1,063.44 | 1,168.96 | 1,405.56 | 759.72 | 1,191.75 | 148,752.17 | -134,259.00 | 20,082.59 | 15,517,500.00 | 6,141.81 | 0.13 |
| 1997 | 3257 | 1,139.57 | 1,252.65 | 1,506.19 | 814.49 | 1,277.67 | 158,399.22 | -134,259.00 | 30,130.79 | 15,517,500.00 | 6,357.31 | 0.19 |
| 1998 | 3371 | 1,221.17 | 1,342.35 | 1,614.04 | 873.20 | 1,369.77 | 168,619.11 | -134,259.00 | 40,780.65 | 15,517,500.00 | 6,580.39 | 0.26 |
| 1999 | 3489 | 1,308.63 | 1,438.49 | 1,729.63 | 936.15 | 1,468.51 | 179,530.70 | -134,259.00 | 52,153.12 | 15,517,500.00 | 6,811.33 | 0.34 |
| 2000 | 3611 | 1,402.38 | 1,541.53 | 1,853.53 | 1,003.63 | 1,574.37 | 191,168.44 | -134,259.00 | 64,284.88 | 15,517,500.00 | 7,050.38 | 0.41 |
| 2001 | 3738 | 1,502.85 | 1,651.98 | 1,986.34 | 1,075.97 | 1,687.85 | 203,567.97 | -134,259.00 | 77,213.97 | 15,517,500.00 | 7,297.86 | 0.50 |
| 2002 | 3868 | 1,610.55 | 1,770.37 | 2,128.68 | 1,153.53 | 1,809.52 | 216,869.19 | -134,259.00 | 91,082.84 | 15,517,500.00 | 7,554.04 | 0.59 |
| 2003 | 4004 | 1,725.99 | 1,897.26 | 2,281.26 | 1,236.68 | 1,939.96 | 231,013.50 | -134,259.00 | 105,835.66 | 15,517,500.00 | 7,819.25 | 0.68 |
| 2004 | 4144 | 1,849.74 | 2,033.29 | 2,444.81 | 1,325.83 | 2,079.80 | 243,680.01 | -134,259.00 | 119,154.47 | 15,517,500.00 | 8,093.79 | 0.77 |
| 2005 | 4289 | 1,982.38 | 2,179.09 | 2,620.13 | 1,421.40 | 2,229.73 | 248,711.04 | -134,259.00 | 124,884.79 | 15,517,500.00 | 8,378.01 | 0.80 |
| 2006 | 4439 | 2,124.57 | 2,335.40 | 2,808.07 | 1,523.88 | 2,390.48 | 253,667.06 | -134,259.00 | 130,590.45 | 15,517,500.00 | 8,672.24 | 0.84 |
| 2007 | 4594 | 2,277.00 | 2,502.95 | 3,009.53 | 1,633.75 | 2,562.83 | 258,522.78 | -134,259.00 | 136,249.84 | 15,517,500.00 | 8,976.84 | 0.88 |
| 2008 | 4755 | 2,440.41 | 2,682.57 | 3,225.51 | 1,751.55 | 2,747.62 | 263,280.76 | -134,259.00 | 141,869.41 | 15,517,500.00 | 9,292.17 | 0.91 |
| 2009 | 4922 | 2,615.59 | 2,875.14 | 3,457.05 | 1,877.85 | 2,945.75 | 267,881.65 | -134,259.00 | 147,394.03 | 15,517,500.00 | 9,618.63 | 0.95 |
| 2010 | 5094 | 2,803.40 | 3,081.58 | 3,705.27 | 2,013.29 | 3,158.20 | 272,347.21 | -134,259.00 | 152,849.94 | 15,517,500.00 | 9,956.60 | 0.98 |

Cuadro N° A.5.147

**CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDAC DE 3.5%**

TRAMO 3

(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI $\frac{4}{5+6}$ |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|------------------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 54,100.99 | 59,469.45 | 71,505.91 | 39,180.11 | 61,461.09 | 139,819.54 | -399,514.00 | 26,023.10 | 25,960,451.00 | 5426.80 | 0.10 |
| 1996 | 3147 | 57,731.02 | 63,459.70 | 76,303.76 | 41,809.00 | 65,584.98 | 148,752.17 | -399,514.00 | 54,126.62 | 25,960,451.00 | 5,601.02 | 0.21 |
| 1997 | 3257 | 61,622.17 | 67,736.96 | 81,446.71 | 44,626.97 | 70,005.48 | 158,399.22 | -399,514.00 | 84,323.52 | 25,960,451.00 | 5,780.11 | 0.32 |
| 1998 | 3371 | 65,794.32 | 72,323.12 | 86,961.07 | 47,648.46 | 74,745.23 | 168,619.11 | -399,514.00 | 116,577.32 | 25,960,451.00 | 5,964.16 | 0.45 |
| 1999 | 3489 | 70,269.00 | 77,241.83 | 92,875.29 | 50,889.04 | 79,828.67 | 179,530.70 | -399,514.00 | 151,120.54 | 25,960,451.00 | 6,153.22 | 0.58 |
| 2000 | 3611 | 75,069.49 | 82,518.67 | 99,220.12 | 54,365.57 | 85,282.23 | 191,168.44 | -399,514.00 | 188,110.53 | 25,960,451.00 | 6,347.37 | 0.72 |
| 2001 | 3738 | 80,220.95 | 88,181.32 | 106,028.84 | 58,096.28 | 91,134.52 | 203,567.97 | -399,514.00 | 227,715.89 | 25,960,451.00 | 6,546.64 | 0.88 |
| 2002 | 3868 | 85,750.65 | 94,259.72 | 113,337.47 | 62,100.90 | 97,416.50 | 216,869.19 | -399,514.00 | 270,220.43 | 25,960,451.00 | 6,751.08 | 1.04 |
| 2003 | 4004 | 91,688.07 | 100,786.32 | 121,185.00 | 66,400.80 | 104,161.67 | 231,013.50 | -399,514.00 | 315,721.38 | 25,960,451.00 | 6,960.73 | 1.22 |
| 2004 | 4144 | 98,065.20 | 107,796.25 | 129,613.69 | 71,019.14 | 111,406.37 | 243,680.01 | -399,514.00 | 362,066.66 | 25,960,451.00 | 7,175.60 | 1.39 |
| 2005 | 4289 | 104,916.67 | 115,327.61 | 138,669.32 | 75,981.00 | 119,189.95 | 248,711.04 | -399,514.00 | 403,281.60 | 25,960,451.00 | 7,395.70 | 1.55 |
| 2006 | 4439 | 112,280.08 | 123,421.68 | 148,401.57 | 81,313.60 | 127,555.09 | 253,667.06 | -399,514.00 | 447,125.08 | 25,960,451.00 | 7,621.02 | 1.72 |
| 2007 | 4594 | 120,172.68 | 132,097.48 | 158,833.28 | 87,029.45 | 136,521.44 | 258,522.78 | -399,514.00 | 493,663.12 | 25,960,451.00 | 7,851.75 | 1.90 |
| 2008 | 4755 | 129,341.27 | 142,175.87 | 170,951.45 | 93,669.37 | 146,937.36 | 263,280.76 | -399,514.00 | 546,842.07 | 25,960,451.00 | 8,081.16 | 2.11 |
| 2009 | 4922 | 139,237.26 | 153,053.84 | 184,031.03 | 100,836.08 | 158,179.64 | 267,881.65 | -399,514.00 | 603,705.51 | 25,960,451.00 | 8,314.85 | 2.32 |
| 2010 | 5094 | 149,921.70 | 164,798.50 | 198,152.72 | 108,573.79 | 170,317.63 | 272,347.21 | -399,514.00 | 664,597.55 | 25,960,451.00 | 8,552.65 | 2.56 |

Cuadro N° A.5.148

**CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{er}. CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 7%**

TRAMO 3

(Cantidades de N\$ a febrero de 1995)

| Año | TPDAc | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 53,108.58 | 58,378.57 | 70,194.25 | 38,461.41 | 60,333.68 | 139,782.60 | -240,000.00 | 180,259.10 | 12,000,000.00 | 5445.67 | 1.50 |
| 1996 | 3253 | 60,351.39 | 66,340.08 | 79,767.11 | 43,706.67 | 68,561.82 | 157,992.92 | -240,000.00 | 236,719.99 | 12,000,000.00 | 5,795.69 | 1.97 |
| 1997 | 3481 | 68,658.87 | 75,471.92 | 90,747.16 | 49,722.98 | 77,999.49 | 178,698.82 | -240,000.00 | 301,299.23 | 12,000,000.00 | 6,165.26 | 2.51 |
| 1998 | 3725 | 78,197.90 | 85,957.52 | 103,354.96 | 56,631.18 | 88,836.25 | 202,251.89 | -240,000.00 | 375,229.69 | 12,000,000.00 | 6,554.92 | 3.13 |
| 1999 | 3986 | 89,163.34 | 98,011.07 | 117,848.05 | 64,572.39 | 101,293.47 | 229,053.97 | -240,000.00 | 459,942.29 | 12,000,000.00 | 6,965.07 | 3.83 |
| 2000 | 4265 | 101,783.14 | 111,883.13 | 134,527.71 | 73,711.69 | 115,630.12 | 247,844.60 | -240,000.00 | 545,380.39 | 12,000,000.00 | 7,396.03 | 4.54 |
| 2001 | 4563 | 116,324.47 | 127,867.41 | 153,747.07 | 84,242.56 | 132,149.71 | 257,544.04 | -240,000.00 | 631,875.27 | 12,000,000.00 | 7,847.86 | 5.26 |
| 2002 | 4882 | 134,291.45 | 147,617.26 | 177,494.13 | 97,254.31 | 152,560.98 | 266,814.01 | -240,000.00 | 736,032.14 | 12,000,000.00 | 8,309.06 | 6.13 |
| 2003 | 5224 | 155,353.46 | 170,769.25 | 205,331.89 | 112,507.48 | 176,488.34 | 275,463.83 | -240,000.00 | 855,914.25 | 12,000,000.00 | 8,785.83 | 7.13 |
| 2004 | 5590 | 179,877.56 | 197,726.89 | 237,745.52 | 130,267.91 | 204,348.80 | 267,160.80 | -240,000.00 | 977,127.49 | 12,000,000.00 | 9,277.95 | 8.14 |
| 2005 | 5981 | 208,473.37 | 229,160.29 | 275,540.76 | 150,977.10 | 236,834.90 | 211,381.83 | -240,000.00 | 1,072,368.26 | 12,000,000.00 | 9,783.12 | 8.93 |
| 2006 | 6400 | 241,868.78 | 265,869.54 | 319,679.63 | 175,162.16 | 274,773.55 | 140,906.15 | -240,000.00 | 1,178,259.82 | 12,000,000.00 | 10,298.19 | 9.81 |
| 2007 | 6848 | 280,935.94 | 308,813.35 | 371,314.88 | 203,454.73 | 319,155.56 | 53,141.20 | -240,000.00 | 1,296,815.67 | 12,000,000.00 | 10,818.92 | 10.80 |
| 2008 | 7327 | 326,724.00 | 359,144.98 | 431,833.17 | 236,614.59 | 371,172.81 | -54,913.65 | -240,000.00 | 1,430,575.90 | 12,000,000.00 | 11,339.69 | 11.91 |
| 2009 | 7840 | 381,745.53 | 419,626.32 | 504,555.37 | 276,461.36 | 433,679.67 | -186,728.50 | -240,000.00 | 1,589,339.74 | 12,000,000.00 | 11,841.26 | 13.23 |
| 2010 | 8389 | 464,627.12 | 510,732.29 | 614,100.36 | 336,484.48 | 527,836.80 | -326,410.32 | -240,000.00 | 1,887,370.71 | 12,000,000.00 | 12,150.98 | 15.71 |

Cuadro N° A.5.149
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4° CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 7%
TRAMO 3
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAc | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI $\frac{4}{5+6}$ |
|------|-------|------------------------------------|------------|-----------|----------|----------|---|--|--------------------------------|------------------|--------------------------------|------------------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 992.40 | 1,090.88 | 1,311.67 | 718.70 | 1,127.41 | 139,782.60 | -134,259.00 | 10,764.66 | 15,517,500.00 | 5933.59 | 0.07 |
| 1996 | 3253 | 1,136.95 | 1,249.78 | 1,502.73 | 823.39 | 1,291.63 | 157,992.92 | -134,259.00 | 29,738.39 | 15,517,500.00 | 6,349.98 | 0.19 |
| 1997 | 3481 | 1,302.63 | 1,431.89 | 1,721.69 | 943.37 | 1,479.84 | 178,698.82 | -134,259.00 | 51,319.23 | 15,517,500.00 | 6,795.67 | 0.33 |
| 1998 | 3725 | 1,492.51 | 1,640.61 | 1,972.67 | 1,080.88 | 1,695.56 | 202,251.89 | -134,259.00 | 75,875.12 | 15,517,500.00 | 7,272.73 | 0.49 |
| 1999 | 3986 | 1,710.17 | 1,879.87 | 2,260.35 | 1,238.51 | 1,942.83 | 229,053.97 | -134,259.00 | 103,826.69 | 15,517,500.00 | 7,783.38 | 0.67 |
| 2000 | 4265 | 1,959.68 | 2,154.14 | 2,590.13 | 1,419.21 | 2,226.28 | 247,844.60 | -134,259.00 | 123,935.03 | 15,517,500.00 | 8,330.00 | 0.80 |
| 2001 | 4563 | 2,245.73 | 2,468.58 | 2,968.20 | 1,626.37 | 2,551.25 | 257,544.04 | -134,259.00 | 135,145.17 | 15,517,500.00 | 8,915.15 | 0.87 |
| 2002 | 4882 | 2,573.71 | 2,829.10 | 3,401.69 | 1,863.89 | 2,923.85 | 266,814.01 | -134,259.00 | 146,147.24 | 15,517,500.00 | 9,541.55 | 0.94 |
| 2003 | 5224 | 2,949.79 | 3,242.50 | 3,898.76 | 2,136.25 | 3,351.09 | 275,463.83 | -134,259.00 | 156,783.22 | 15,517,500.00 | 10,212.14 | 1.01 |
| 2004 | 5590 | 3,381.09 | 3,716.59 | 4,468.81 | 2,448.59 | 3,841.06 | 267,160.80 | -134,259.00 | 150,757.94 | 15,517,500.00 | 10,930.05 | 0.97 |
| 2005 | 5981 | 3,875.76 | 4,260.35 | 5,122.61 | 2,806.83 | 4,403.03 | 305,577.41 | -134,259.00 | 191,786.99 | 15,517,500.00 | 11,698.67 | 1.24 |
| 2006 | 6400 | 4,443.18 | 4,884.08 | 5,872.58 | 3,217.77 | 5,047.65 | 349,539.94 | -134,259.00 | 238,746.20 | 15,517,500.00 | 12,521.60 | 1.54 |
| 2007 | 6848 | 5,094.15 | 5,599.65 | 6,732.98 | 3,689.20 | 5,787.18 | 399,850.54 | -134,259.00 | 292,494.70 | 15,517,500.00 | 13,402.71 | 1.88 |
| 2008 | 7327 | 5,841.08 | 6,420.69 | 7,720.19 | 4,230.13 | 6,635.72 | 459,064.09 | -134,259.00 | 355,652.92 | 15,517,500.00 | 14,346.18 | 2.29 |
| 2009 | 7840 | 6,698.24 | 7,362.91 | 8,853.11 | 4,850.89 | 7,609.50 | 526,955.15 | -134,259.00 | 428,070.80 | 15,517,500.00 | 15,356.44 | 2.76 |
| 2010 | 8389 | 7,682.07 | 8,444.36 | 10,153.43 | 5,563.38 | 8,727.16 | 596,155.06 | -134,259.00 | 502,466.46 | 15,517,500.00 | 16,438.31 | 3.23 |

Cuadro N° A.5.150
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDAC DE 7%
TRAMO 3
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI $\frac{4}{5+6}$ |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|------------------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 54,100.99 | 59,469.45 | 71,505.91 | 39,180.11 | 61,461.09 | 139,782.60 | -399,514.00 | 25,986.16 | 25,960,451.00 | 5426.80 | 0.10 |
| 1996 | 3253 | 61,488.34 | 67,589.86 | 81,269.83 | 44,530.06 | 69,853.45 | 157,992.92 | -399,514.00 | 83,210.46 | 25,960,451.00 | 5,774.08 | 0.32 |
| 1997 | 3481 | 69,961.49 | 76,903.81 | 92,468.85 | 50,666.34 | 79,479.33 | 178,698.82 | -399,514.00 | 148,664.64 | 25,960,451.00 | 6,140.49 | 0.57 |
| 1998 | 3725 | 79,690.41 | 87,598.13 | 105,327.63 | 57,712.06 | 90,531.81 | 202,251.89 | -399,514.00 | 223,597.92 | 25,960,451.00 | 6,526.52 | 0.86 |
| 1999 | 3986 | 90,873.51 | 99,890.93 | 120,108.39 | 65,810.89 | 103,236.30 | 229,053.97 | -399,514.00 | 309,460.01 | 25,960,451.00 | 6,932.53 | 1.19 |
| 2000 | 4265 | 103,742.82 | 114,037.27 | 137,117.84 | 75,130.89 | 117,856.40 | 247,844.60 | -399,514.00 | 396,215.83 | 25,960,451.00 | 7,358.73 | 1.53 |
| 2001 | 4563 | 118,570.21 | 130,335.98 | 156,715.27 | 85,868.93 | 134,700.96 | 257,544.04 | -399,514.00 | 484,221.39 | 25,960,451.00 | 7,805.11 | 1.86 |
| 2002 | 4882 | 136,865.16 | 150,446.36 | 180,895.82 | 99,118.20 | 155,484.83 | 266,814.01 | -399,514.00 | 590,110.37 | 25,960,451.00 | 8,260.06 | 2.27 |
| 2003 | 5224 | 158,303.25 | 174,011.75 | 209,230.65 | 114,643.73 | 179,839.44 | 275,463.83 | -399,514.00 | 711,978.65 | 25,960,451.00 | 8,729.67 | 2.74 |
| 2004 | 5590 | 183,258.64 | 201,443.49 | 242,214.33 | 132,716.51 | 208,189.86 | 267,160.80 | -399,514.00 | 835,469.63 | 25,960,451.00 | 9,213.56 | 3.22 |
| 2005 | 5981 | 212,349.13 | 233,420.64 | 280,663.37 | 153,783.93 | 241,237.93 | 305,577.41 | -399,514.00 | 1,027,518.41 | 25,960,451.00 | 9,709.30 | 3.96 |
| 2006 | 6400 | 246,311.96 | 270,753.62 | 325,552.22 | 178,379.93 | 279,821.20 | 349,539.94 | -399,514.00 | 1,250,844.86 | 25,960,451.00 | 10,213.55 | 4.82 |
| 2007 | 6848 | 286,030.10 | 314,413.00 | 378,047.86 | 207,143.93 | 324,942.74 | 399,850.54 | -399,514.00 | 1,510,914.17 | 25,960,451.00 | 10,721.87 | 5.82 |
| 2008 | 7327 | 332,565.08 | 365,565.68 | 439,553.37 | 240,844.72 | 377,808.53 | 459,064.09 | -399,514.00 | 1,815,887.47 | 25,960,451.00 | 11,228.39 | 6.99 |
| 2009 | 7840 | 388,443.77 | 426,989.23 | 513,408.48 | 281,312.25 | 441,289.17 | 526,955.15 | -399,514.00 | 2,178,884.04 | 25,960,451.00 | 11,713.61 | 8.39 |
| 2010 | 8389 | 472,309.18 | 519,176.65 | 624,253.79 | 342,047.85 | 536,563.96 | 596,155.06 | -399,514.00 | 2,690,992.49 | 25,960,451.00 | 12,004.57 | 10.36 |

Cuadro N° A.5.151

**CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{er}. CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 10%**

TRAMO 3

(Cantidades de N\$ a febrero de 1995)

| Año | TPDAc | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|--------------|--------------|------------|--------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 49,321.08 | 54,215.23 | 65,188.25 | 35,718.49 | 56,030.91 | 139,782.60 | -240,000.00 | 160,256.56 | 12,000,000.00 | 7508.90 | 1.33 |
| 1996 | 3345 | 54,253.18 | 59,636.75 | 78,005.07 | 39,290.33 | 61,634.00 | 166,134.81 | -240,000.00 | 218,954.15 | 12,000,000.00 | 8,245.88 | 1.82 |
| 1997 | 3679 | 64,920.10 | 71,362.16 | 93,564.13 | 47,015.35 | 73,752.09 | 197,720.77 | -240,000.00 | 308,334.61 | 12,000,000.00 | 9,029.79 | 2.57 |
| 1998 | 4047 | 77,869.26 | 85,596.27 | 112,496.74 | 56,393.17 | 88,462.90 | 235,609.54 | -240,000.00 | 416,427.88 | 12,000,000.00 | 9,882.40 | 3.47 |
| 1999 | 4452 | 93,626.07 | 102,916.63 | 135,591.41 | 67,804.31 | 106,363.32 | 254,042.24 | -240,000.00 | 520,343.98 | 12,000,000.00 | 10,808.09 | 4.33 |
| 2000 | 4897 | 112,846.80 | 124,044.64 | 165,496.70 | 81,724.02 | 128,198.92 | 267,204.32 | -240,000.00 | 639,515.40 | 12,000,000.00 | 11,806.31 | 5.32 |
| 2001 | 5387 | 137,735.73 | 151,403.31 | 203,454.40 | 99,748.67 | 156,473.84 | 279,111.75 | -240,000.00 | 787,927.69 | 12,000,000.00 | 12,872.76 | 6.56 |
| 2002 | 5925 | 169,326.34 | 186,128.68 | 250,600.71 | 122,626.69 | 192,362.16 | 219,969.76 | -240,000.00 | 901,014.33 | 12,000,000.00 | 14,011.61 | 7.50 |
| 2003 | 6518 | 208,564.26 | 229,260.19 | 309,344.30 | 151,042.92 | 236,938.15 | 119,069.69 | -240,000.00 | 1,014,219.50 | 12,000,000.00 | 15,225.45 | 8.44 |
| 2004 | 7169 | 257,454.12 | 283,001.41 | 382,800.19 | 186,449.11 | 292,479.18 | -17,728.76 | -240,000.00 | 1,144,455.25 | 12,000,000.00 | 16,510.48 | 9.52 |
| 2005 | 7886 | 318,588.42 | 350,202.10 | 478,643.92 | 230,722.78 | 361,930.43 | -199,435.20 | -240,000.00 | 1,300,652.46 | 12,000,000.00 | 17,848.50 | 10.82 |
| 2006 | 8675 | 398,355.22 | 437,884.20 | 634,687.50 | 288,490.15 | 452,549.01 | -381,674.49 | -240,000.00 | 1,590,291.58 | 12,000,000.00 | 19,115.75 | 13.23 |
| 2007 | 9543 | 528,223.91 | 580,639.82 | 841,081.02 | 382,541.48 | 600,085.54 | -567,058.81 | -240,000.00 | 2,125,512.95 | 12,000,000.00 | 20,182.09 | 17.68 |
| 2008 | 10497 | 699,996.75 | 769,457.77 | 1,116,441.68 | 506,939.94 | 795,227.03 | -686,075.76 | -240,000.00 | 2,961,987.41 | 12,000,000.00 | 21,068.22 | 24.64 |
| 2009 | 11547 | 929,168.15 | 1,021,369.95 | 1,487,970.44 | 672,906.61 | 1,055,575.79 | -819,579.42 | -240,000.00 | 4,107,411.51 | 12,000,000.00 | 21,636.96 | 34.17 |
| 2010 | 12701 | 1,238,376.34 | 1,361,261.01 | 1,622,696.65 | 896,836.19 | 1,406,849.87 | -977,033.17 | -240,000.00 | 5,308,986.90 | 12,000,000.00 | 22,740.61 | 44.16 |

Cuadro N° A.5.152

**CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4°. CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 10%**

TRAMO 3

(Cantidades de N\$ a febrero de 1995)

| Año | TPDac | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|------------|-----------|-----------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 4,779.91 | 5,254.22 | 6,317.66 | 3,461.63 | 5,430.19 | 139,782.60 | -134,259.00 | 30,767.20 | 15,517,500.00 | 5897.45 | 0.20 |
| 1996 | 3345 | 5,792.72 | 6,367.53 | 7,656.30 | 4,195.11 | 6,580.78 | 166,134.81 | -134,259.00 | 62,468.24 | 15,517,500.00 | 6,484.67 | 0.40 |
| 1997 | 3679 | 7,021.24 | 7,717.96 | 9,280.04 | 5,084.80 | 7,976.43 | 197,720.77 | -134,259.00 | 100,542.24 | 15,517,500.00 | 7,130.06 | 0.65 |
| 1998 | 4047 | 8,511.78 | 9,356.41 | 11,250.10 | 6,164.26 | 9,669.76 | 235,609.54 | -134,259.00 | 146,302.85 | 15,517,500.00 | 7,839.33 | 0.94 |
| 1999 | 4452 | 10,320.73 | 11,344.86 | 13,641.00 | 7,474.31 | 11,724.81 | 254,042.24 | -134,259.00 | 174,288.96 | 15,517,500.00 | 8,618.70 | 1.12 |
| 2000 | 4897 | 12,516.77 | 13,758.82 | 16,543.52 | 9,064.69 | 14,219.61 | 267,204.32 | -134,259.00 | 199,048.73 | 15,517,500.00 | 9,475.01 | 1.28 |
| 2001 | 5387 | 15,183.63 | 16,690.31 | 20,068.32 | 10,996.03 | 17,249.27 | 279,111.75 | -134,259.00 | 225,040.32 | 15,517,500.00 | 10,415.73 | 1.45 |
| 2002 | 5925 | 18,423.44 | 20,251.60 | 24,350.39 | 13,342.31 | 20,929.83 | 219,969.76 | -134,259.00 | 183,008.33 | 15,517,500.00 | 11,449.02 | 1.18 |
| 2003 | 6518 | 22,360.89 | 24,579.77 | 29,554.53 | 16,193.83 | 25,402.95 | 274,498.31 | -134,259.00 | 258,331.27 | 15,517,500.00 | 12,583.80 | 1.66 |
| 2004 | 7169 | 27,148.36 | 29,842.31 | 35,882.16 | 19,660.93 | 30,841.73 | 342,383.24 | -134,259.00 | 351,499.73 | 15,517,500.00 | 13,829.80 | 2.26 |
| 2005 | 7886 | 32,972.26 | 36,244.12 | 43,579.64 | 23,878.62 | 37,457.94 | 426,897.11 | -134,259.00 | 466,770.70 | 15,517,500.00 | 15,197.61 | 3.01 |
| 2006 | 8675 | 40,060.86 | 44,036.12 | 52,948.67 | 29,012.21 | 45,510.89 | 506,403.25 | -134,259.00 | 583,712.99 | 15,517,500.00 | 16,698.77 | 3.76 |
| 2007 | 9543 | 48,694.03 | 53,525.96 | 64,359.16 | 35,264.37 | 55,318.55 | 580,288.34 | -134,259.00 | 703,191.41 | 15,517,500.00 | 18,345.81 | 4.53 |
| 2008 | 10497 | 59,215.39 | 65,091.36 | 78,265.28 | 42,883.98 | 67,271.28 | 670,898.02 | -134,259.00 | 849,366.31 | 15,517,500.00 | 20,152.31 | 5.47 |
| 2009 | 11547 | 72,047.47 | 79,196.77 | 95,225.49 | 52,177.01 | 81,849.09 | 749,169.36 | -134,259.00 | 995,406.19 | 15,517,500.00 | 22,132.96 | 6.41 |
| 2010 | 12701 | 87,710.66 | 96,414.23 | 115,927.58 | 63,520.35 | 99,643.16 | 810,359.78 | -134,259.00 | 1,139,316.76 | 15,517,500.00 | 24,303.60 | 7.33 |

Cuadro N° A.5.153
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDAC DE 10%
TRAMO 3
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAc | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|--------------|--------------|------------|--------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 54,100.99 | 59,469.45 | 71,505.91 | 39,180.11 | 61,461.09 | 139,782.60 | -399,514.00 | 25,986.16 | 25,960,451.00 | 5426.80 | 0.10 |
| 1996 | 3345 | 64,810.99 | 71,242.22 | 85,661.41 | 46,936.33 | 73,628.13 | 166,134.81 | -399,514.00 | 108,899.90 | 25,960,451.00 | 5,921.48 | 0.42 |
| 1997 | 3679 | 77,811.48 | 85,532.74 | 102,844.22 | 56,351.32 | 88,397.25 | 197,720.77 | -399,514.00 | 209,143.79 | 25,960,451.00 | 6,454.54 | 0.81 |
| 1998 | 4047 | 93,626.39 | 102,916.98 | 123,746.89 | 67,804.54 | 106,363.69 | 235,609.54 | -399,514.00 | 330,554.03 | 25,960,451.00 | 7,027.12 | 1.27 |
| 1999 | 4452 | 112,908.73 | 124,112.72 | 149,232.47 | 81,768.87 | 128,269.28 | 254,042.24 | -399,514.00 | 450,820.32 | 25,960,451.00 | 7,639.75 | 1.74 |
| 2000 | 4897 | 137,731.08 | 151,398.20 | 182,040.30 | 99,745.30 | 156,468.55 | 267,204.32 | -399,514.00 | 595,073.73 | 25,960,451.00 | 8,280.15 | 2.29 |
| 2001 | 5387 | 169,116.67 | 185,898.20 | 223,522.81 | 122,474.84 | 192,123.96 | 279,111.75 | -399,514.00 | 772,734.22 | 25,960,451.00 | 8,946.82 | 2.98 |
| 2002 | 5925 | 208,027.30 | 228,669.95 | 274,951.19 | 150,654.05 | 236,328.15 | 219,969.76 | -399,514.00 | 919,086.42 | 25,960,451.00 | 9,639.72 | 3.54 |
| 2003 | 6518 | 256,410.08 | 281,853.78 | 338,898.95 | 185,693.02 | 291,293.11 | 274,498.31 | -399,514.00 | 1,229,133.25 | 25,960,451.00 | 10,350.38 | 4.73 |
| 2004 | 7169 | 316,774.20 | 348,207.86 | 418,682.49 | 229,408.91 | 359,869.39 | 342,383.24 | -399,514.00 | 1,615,812.09 | 25,960,451.00 | 11,066.03 | 6.22 |
| 2005 | 7886 | 395,113.37 | 434,320.66 | 522,223.72 | 286,142.40 | 448,866.13 | 426,897.11 | -399,514.00 | 2,114,049.39 | 25,960,451.00 | 11,741.86 | 8.14 |
| 2006 | 8675 | 520,264.41 | 571,890.50 | 687,636.43 | 376,777.19 | 591,043.21 | 506,403.25 | -399,514.00 | 2,854,500.99 | 25,960,451.00 | 12,116.40 | 10.99 |
| 2007 | 9543 | 685,054.71 | 753,033.02 | 905,440.50 | 496,118.86 | 778,252.22 | 580,288.34 | -399,514.00 | 3,798,673.66 | 25,960,451.00 | 12,273.30 | 14.63 |
| 2008 | 10497 | 903,913.71 | 993,609.49 | 1,194,707.36 | 654,617.26 | 1,026,885.64 | 670,898.02 | -399,514.00 | 5,045,117.48 | 25,960,451.00 | 12,091.72 | 19.42 |
| 2009 | 11547 | 1,197,844.14 | 1,316,706.79 | 1,583,196.42 | 867,482.64 | 1,360,803.51 | 749,169.36 | -399,514.00 | 6,675,688.86 | 25,960,451.00 | 11,389.98 | 25.70 |
| 2010 | 12701 | 1,315,440.81 | 1,445,972.63 | 1,738,624.21 | 952,646.54 | 1,494,398.49 | 810,359.78 | -399,514.00 | 7,357,928.46 | 25,960,451.00 | 12,587.91 | 28.33 |

Cuadro N° A.5.154
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{er} CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 15%
TRAMO 3
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|--------------|--------------|--------------|--------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 49,321.08 | 54,215.23 | 65,188.25 | 35,718.49 | 56,030.91 | 139,782.60 | -240,000.00 | 160,256.56 | 12,000,000.00 | 5518.03 | 1.33 |
| 1996 | 3497 | 64,223.83 | 70,596.79 | 84,885.32 | 46,511.11 | 72,961.09 | 180,154.59 | -240,000.00 | 279,332.72 | 12,000,000.00 | 6,286.17 | 2.33 |
| 1997 | 4021 | 84,060.40 | 92,401.76 | 111,103.44 | 60,876.82 | 95,496.31 | 232,840.37 | -240,000.00 | 436,779.10 | 12,000,000.00 | 7,147.74 | 3.64 |
| 1998 | 4624 | 110,697.23 | 121,681.77 | 146,309.48 | 80,167.30 | 125,756.91 | 259,410.46 | -240,000.00 | 604,023.14 | 12,000,000.00 | 8,107.29 | 5.03 |
| 1999 | 5318 | 149,702.54 | 164,557.59 | 197,863.01 | 108,415.07 | 170,068.65 | 277,606.33 | -240,000.00 | 828,213.19 | 12,000,000.00 | 9,137.87 | 6.90 |
| 2000 | 6116 | 203,281.12 | 223,452.81 | 268,678.10 | 147,216.85 | 230,936.28 | 189,973.08 | -240,000.00 | 1,023,538.24 | 12,000,000.00 | 10,249.13 | 8.52 |
| 2001 | 7033 | 277,386.31 | 304,911.49 | 366,623.28 | 200,884.07 | 315,123.02 | 13,154.99 | -240,000.00 | 1,238,083.18 | 12,000,000.00 | 11,420.35 | 10.31 |
| 2002 | 8088 | 390,303.71 | 429,033.74 | 515,866.73 | 282,659.23 | 443,402.15 | -256,399.59 | -240,000.00 | 1,564,865.97 | 12,000,000.00 | 12,519.59 | 13.03 |
| 2003 | 9301 | 589,924.31 | 648,462.78 | 779,706.19 | 427,225.12 | 670,179.91 | -512,776.12 | -240,000.00 | 2,362,722.19 | 12,000,000.00 | 13,140.27 | 19.67 |
| 2004 | 10696 | 893,653.17 | 982,330.80 | 1,181,145.92 | 647,186.55 | 1,015,229.22 | -711,095.90 | -240,000.00 | 3,768,449.76 | 12,000,000.00 | 13,176.21 | 31.37 |
| 2005 | 12301 | 1,278,351.58 | 1,405,203.02 | 1,689,603.30 | 925,786.39 | 1,452,263.50 | -920,876.34 | -240,000.00 | 5,590,331.45 | 12,000,000.00 | 12,919.85 | 46.54 |
| 2006 | 14146 | 1,709,560.36 | 1,879,200.84 | 2,259,533.44 | 1,238,069.20 | 1,942,135.59 | -1,193,371.14 | -240,000.00 | 7,595,128.28 | 12,000,000.00 | 12,786.06 | 63.23 |
| 2007 | 16268 | 2,328,646.45 | 2,559,719.15 | 3,077,781.64 | 1,686,413.38 | 2,645,444.56 | -1,550,072.35 | -240,000.00 | 10,507,932.82 | 12,000,000.00 | 11,529.88 | 87.48 |
| 2008 | 18708 | 3,244,128.75 | 3,566,045.19 | 4,287,777.62 | 2,349,408.65 | 3,685,472.63 | -2,017,585.55 | -240,000.00 | 14,875,247.30 | 12,000,000.00 | 8,242.49 | 123.88 |
| 2009 | 21514 | 4,651,390.68 | 5,112,950.39 | 6,147,760.26 | 3,368,552.34 | 5,284,183.94 | -2,631,013.99 | -240,000.00 | 21,693,823.61 | 12,000,000.00 | 1,215.10 | 180.76 |
| 2010 | 24741 | 6,933,643.49 | 7,621,672.23 | 9,164,221.02 | 5,021,367.29 | 7,876,923.29 | -3,436,686.67 | -240,000.00 | 32,941,140.65 | 12,000,000.00 | (13,016.15) | 274.81 |

Cuadro N° A.5.155

**CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4°. CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 15%**

TRAMO 3

(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI $\frac{4}{5+6}$ |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|------------------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 4,779.91 | 5,254.22 | 6,317.66 | 3,461.63 | 5,430.19 | 139,782.60 | -134,259.00 | 30,767.20 | 15,517,500.00 | 5897.45 | 0.20 |
| 1996 | 3497 | 6,336.24 | 6,964.99 | 8,374.68 | 4,588.73 | 7,198.25 | 180,154.59 | -134,259.00 | 79,358.47 | 15,517,500.00 | 6,778.10 | 0.51 |
| 1997 | 4021 | 8,402.30 | 9,236.06 | 11,105.39 | 6,084.97 | 9,545.38 | 232,840.37 | -134,259.00 | 142,955.46 | 15,517,500.00 | 7,789.53 | 0.92 |
| 1998 | 4624 | 11,146.60 | 12,252.68 | 14,732.56 | 8,072.40 | 12,663.03 | 259,410.46 | -134,259.00 | 184,018.72 | 15,517,500.00 | 8,950.89 | 1.19 |
| 1999 | 5318 | 14,794.23 | 16,262.27 | 19,553.65 | 10,714.03 | 16,806.89 | 277,606.33 | -134,259.00 | 221,478.38 | 15,517,500.00 | 10,284.07 | 1.43 |
| 2000 | 6116 | 19,646.25 | 21,595.76 | 25,966.59 | 14,227.88 | 22,319.00 | 375,183.60 | -134,259.00 | 344,680.07 | 15,517,500.00 | 11,814.00 | 2.22 |
| 2001 | 7033 | 26,106.07 | 28,696.58 | 34,504.56 | 18,906.10 | 29,657.64 | 486,411.26 | -134,259.00 | 490,023.21 | 15,517,500.00 | 13,569.08 | 3.16 |
| 2002 | 8088 | 34,715.29 | 38,160.11 | 45,883.41 | 25,140.93 | 39,438.09 | 635,241.02 | -134,259.00 | 684,319.84 | 15,517,500.00 | 15,581.54 | 4.41 |
| 2003 | 9301 | 46,202.75 | 50,787.47 | 61,066.43 | 33,460.18 | 52,488.35 | 769,685.15 | -134,259.00 | 879,431.34 | 15,517,500.00 | 17,887.87 | 5.66 |
| 2004 | 10696 | 61,551.85 | 67,659.67 | 81,353.39 | 44,576.05 | 69,925.60 | 932,579.05 | -134,259.00 | 1,123,386.62 | 15,517,500.00 | 20,529.23 | 7.23 |
| 2005 | 12301 | 82,093.56 | 90,239.75 | 108,503.45 | 59,452.43 | 93,261.89 | 1,067,655.96 | -134,259.00 | 1,366,948.04 | 15,517,500.00 | 23,551.83 | 8.80 |
| 2006 | 14146 | 109,635.74 | 120,514.94 | 144,906.04 | 79,398.56 | 124,551.01 | 1,203,374.66 | -134,259.00 | 1,648,121.95 | 15,517,500.00 | 27,007.23 | 10.60 |
| 2007 | 16268 | 146,644.15 | 161,195.72 | 193,820.18 | 106,200.17 | 166,594.19 | 1,351,572.58 | -134,259.00 | 1,991,767.98 | 15,517,500.00 | 30,952.41 | 12.81 |
| 2008 | 18708 | 196,498.15 | 215,996.76 | 259,712.37 | 142,304.60 | 223,230.52 | 1,511,580.76 | -134,259.00 | 2,415,064.17 | 15,517,500.00 | 35,449.60 | 15.53 |
| 2009 | 21514 | 263,855.20 | 290,037.68 | 348,738.40 | 191,084.80 | 299,751.09 | 1,681,810.50 | -134,259.00 | 2,941,018.68 | 15,517,500.00 | 40,565.57 | 18.90 |
| 2010 | 24741 | 355,176.32 | 390,420.63 | 469,437.79 | 257,219.85 | 403,495.88 | 1,859,351.06 | -134,259.00 | 3,600,842.53 | 15,517,500.00 | 46,369.98 | 23.14 |

Cuadro N° A.5.156
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDAC DE 15%
TRAMO 3
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|--------------|--------------|--------------|--------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 54,100.99 | 59,469.45 | 71,505.91 | 39,180.11 | 61,461.09 | 139,782.60 | -399,514.00 | 25,986.16 | 25,960,451.00 | 5426.80 | 0.10 |
| 1996 | 3497 | 70,560.07 | 77,561.78 | 93,259.99 | 51,099.83 | 80,159.33 | 180,154.59 | -399,514.00 | 153,281.60 | 25,960,451.00 | 6,165.24 | 0.59 |
| 1997 | 4021 | 92,462.70 | 101,637.82 | 122,208.83 | 66,961.79 | 105,041.69 | 232,840.37 | -399,514.00 | 321,639.19 | 25,960,451.00 | 6,987.38 | 1.24 |
| 1998 | 4624 | 121,843.83 | 133,934.45 | 161,042.04 | 88,239.70 | 138,419.94 | 259,410.46 | -399,514.00 | 503,376.40 | 25,960,451.00 | 7,894.55 | 1.94 |
| 1999 | 5318 | 164,496.77 | 180,819.86 | 217,416.66 | 119,129.10 | 186,875.55 | 277,606.33 | -399,514.00 | 746,830.25 | 25,960,451.00 | 8,855.52 | 2.88 |
| 2000 | 6116 | 222,927.37 | 245,048.56 | 294,644.69 | 161,444.73 | 253,255.28 | 375,183.60 | -399,514.00 | 1,152,990.23 | 25,960,451.00 | 9,874.18 | 4.44 |
| 2001 | 7033 | 303,492.38 | 333,608.07 | 401,127.84 | 219,790.17 | 344,780.66 | 486,411.26 | -399,514.00 | 1,689,696.39 | 25,960,451.00 | 10,922.11 | 6.51 |
| 2002 | 8088 | 425,019.00 | 467,193.84 | 561,750.14 | 307,800.15 | 482,840.24 | 635,241.02 | -399,514.00 | 2,480,330.39 | 25,960,451.00 | 11,857.05 | 9.55 |
| 2003 | 9301 | 636,127.07 | 699,250.26 | 840,772.62 | 460,685.30 | 722,668.26 | 769,685.15 | -399,514.00 | 3,729,674.65 | 25,960,451.00 | 12,258.48 | 14.36 |
| 2004 | 10696 | 955,205.02 | 1,049,990.47 | 1,262,499.31 | 691,762.60 | 1,085,154.83 | 932,579.05 | -399,514.00 | 5,577,677.29 | 25,960,451.00 | 12,001.49 | 21.48 |
| 2005 | 12301 | 1,360,445.14 | 1,495,442.76 | 1,798,106.75 | 985,238.82 | 1,545,525.39 | 1,067,655.96 | -399,514.00 | 7,852,900.83 | 25,960,451.00 | 11,353.09 | 30.24 |
| 2006 | 14146 | 1,819,196.09 | 1,999,715.79 | 2,404,439.48 | 1,317,467.76 | 2,066,686.60 | 1,203,374.66 | -399,514.00 | 10,411,366.37 | 25,960,451.00 | 10,693.65 | 40.09 |
| 2007 | 16268 | 2,475,290.60 | 2,720,914.86 | 3,271,601.81 | 1,792,613.55 | 2,812,038.75 | 1,351,572.58 | -399,514.00 | 14,024,518.15 | 25,960,451.00 | 8,731.16 | 54.00 |
| 2008 | 18708 | 3,440,626.90 | 3,782,041.95 | 4,547,490.00 | 2,491,713.25 | 3,908,703.15 | 1,511,580.76 | -399,514.00 | 19,282,642.02 | 25,960,451.00 | 4,492.30 | 74.26 |
| 2009 | 21514 | 4,915,245.88 | 5,402,988.07 | 6,496,498.66 | 3,559,637.14 | 5,583,935.03 | 1,681,810.50 | -399,514.00 | 27,240,601.28 | 25,960,451.00 | (3,820.61) | 104.95 |
| 2010 | 24741 | 7,288,819.81 | 8,012,092.86 | 9,633,658.81 | 5,278,587.14 | 8,280,419.17 | 1,859,351.06 | -399,514.00 | 39,953,414.85 | 25,960,451.00 | (19,794.73) | 154.02 |

Cuadro N° A.5.157
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{er} CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 3.5%
TRAMO 4
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAc | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|---------------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 52,901.81 | 58,151.28 | 69,920.95 | 38,323.18 | 60,116.84 | 67,426.67 | -167,532.00 | 179,308.72 | 8,376,570.00 | 100687.31 | 2.12 |
| 1996 | 3147 | 56,461.55 | 62,064.26 | 74,625.89 | 40,901.56 | 64,161.50 | 71,734.34 | -167,532.00 | 202,417.10 | 8,376,570.00 | 104,216.90 | 2.39 |
| 1997 | 3257 | 60,283.99 | 66,266.00 | 79,678.03 | 43,670.20 | 68,504.62 | 76,386.54 | -167,532.00 | 227,257.38 | 8,376,570.00 | 107,870.19 | 2.68 |
| 1998 | 3371 | 64,390.17 | 70,779.64 | 85,105.20 | 46,644.35 | 73,170.11 | 81,314.99 | -167,532.00 | 253,872.46 | 8,376,570.00 | 111,651.48 | 2.99 |
| 1999 | 3489 | 68,803.00 | 75,630.36 | 90,937.66 | 49,840.59 | 78,183.98 | 86,577.00 | -167,532.00 | 282,440.59 | 8,376,570.00 | 115,565.23 | 3.33 |
| 2000 | 3611 | 73,547.39 | 80,845.53 | 97,208.35 | 53,276.96 | 83,574.55 | 92,189.19 | -167,532.00 | 313,109.96 | 8,376,570.00 | 119,616.04 | 3.69 |
| 2001 | 3738 | 78,650.47 | 86,454.99 | 103,953.11 | 56,973.10 | 89,372.63 | 98,168.75 | -167,532.00 | 346,041.05 | 8,376,570.00 | 123,808.67 | 4.07 |
| 2002 | 3868 | 86,633.04 | 95,229.68 | 114,503.75 | 62,754.62 | 98,441.97 | 104,583.14 | -167,532.00 | 394,614.20 | 8,376,570.00 | 128,108.43 | 4.64 |
| 2003 | 4004 | 92,953.78 | 102,177.63 | 122,857.90 | 67,332.63 | 105,623.42 | 111,404.10 | -167,532.00 | 434,817.45 | 8,376,570.00 | 132,593.13 | 5.11 |
| 2004 | 4144 | 99,775.32 | 109,676.07 | 131,873.97 | 72,273.35 | 113,373.83 | 117,512.41 | -167,532.00 | 476,952.93 | 8,376,570.00 | 137,234.18 | 5.60 |
| 2005 | 4289 | 107,140.97 | 117,772.62 | 141,609.20 | 77,608.14 | 121,742.42 | 119,938.57 | -167,532.00 | 518,279.93 | 8,376,570.00 | 142,036.92 | 6.08 |
| 2006 | 4439 | 115,098.23 | 126,519.48 | 152,126.35 | 83,371.39 | 130,783.12 | 122,328.57 | -167,532.00 | 562,695.14 | 8,376,570.00 | 147,006.87 | 6.60 |
| 2007 | 4594 | 123,699.17 | 135,973.90 | 163,494.26 | 89,600.82 | 140,555.10 | 124,670.19 | -167,532.00 | 610,461.44 | 8,376,570.00 | 152,149.68 | 7.16 |
| 2008 | 4755 | 133,001.00 | 146,198.75 | 175,788.54 | 96,337.85 | 151,123.36 | 126,964.68 | -167,532.00 | 661,882.19 | 8,376,570.00 | 157,471.22 | 7.76 |
| 2009 | 4922 | 143,066.62 | 157,263.19 | 189,092.33 | 103,628.05 | 162,559.35 | 129,183.42 | -167,532.00 | 717,260.97 | 8,376,570.00 | 162,977.48 | 8.40 |
| 2010 | 5094 | 153,965.28 | 169,243.32 | 203,497.14 | 111,521.56 | 174,941.75 | 131,336.89 | -167,532.00 | 776,973.95 | 8,376,570.00 | 168,674.66 | 9.09 |

Cuadro N° A.5.158
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4° CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 3.5%
TRAMO 4
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAc | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|-----------|----------|----------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 694.22 | 763.11 | 917.56 | 491.25 | 770.61 | 67,426.67 | -6,527.00 | 64,536.43 | 9,633,055.00 | 5950.34 | 0.67 |
| 1996 | 3147 | 744.08 | 817.92 | 983.47 | 526.95 | 826.62 | 71,734.34 | -6,527.00 | 69,106.38 | 9,633,055.00 | 6,159.71 | 0.72 |
| 1997 | 3257 | 797.54 | 876.68 | 1,054.12 | 565.24 | 886.69 | 76,386.54 | -6,527.00 | 74,039.82 | 9,633,055.00 | 6,376.49 | 0.77 |
| 1998 | 3371 | 854.86 | 939.69 | 1,129.87 | 606.31 | 951.11 | 81,314.99 | -6,527.00 | 79,269.84 | 9,633,055.00 | 6,600.95 | 0.82 |
| 1999 | 3489 | 916.31 | 1,007.24 | 1,211.10 | 650.37 | 1,020.22 | 86,577.00 | -6,527.00 | 84,855.23 | 9,633,055.00 | 6,833.35 | 0.88 |
| 2000 | 3611 | 982.20 | 1,079.67 | 1,298.19 | 697.62 | 1,094.34 | 92,189.19 | -6,527.00 | 90,814.22 | 9,633,055.00 | 7,073.98 | 0.94 |
| 2001 | 3738 | 1,052.86 | 1,157.33 | 1,391.57 | 748.30 | 1,173.85 | 98,168.75 | -6,527.00 | 97,165.67 | 9,633,055.00 | 7,323.14 | 1.01 |
| 2002 | 3868 | 1,128.62 | 1,240.62 | 1,491.71 | 802.67 | 1,259.13 | 104,583.14 | -6,527.00 | 103,978.89 | 9,633,055.00 | 7,581.13 | 1.08 |
| 2003 | 4004 | 1,209.87 | 1,329.92 | 1,599.09 | 860.99 | 1,350.62 | 111,404.10 | -6,527.00 | 111,227.59 | 9,633,055.00 | 7,848.27 | 1.15 |
| 2004 | 4144 | 1,296.99 | 1,425.70 | 1,714.25 | 923.55 | 1,448.75 | 117,512.41 | -6,527.00 | 117,794.64 | 9,633,055.00 | 8,124.89 | 1.22 |
| 2005 | 4289 | 1,390.43 | 1,528.40 | 1,837.75 | 990.66 | 1,554.02 | 119,938.57 | -6,527.00 | 120,712.84 | 9,633,055.00 | 8,411.33 | 1.25 |
| 2006 | 4439 | 1,490.64 | 1,638.56 | 1,970.19 | 1,062.65 | 1,666.96 | 122,328.57 | -6,527.00 | 123,630.56 | 9,633,055.00 | 8,707.94 | 1.28 |
| 2007 | 4594 | 1,598.12 | 1,756.70 | 2,112.24 | 1,139.88 | 1,788.12 | 124,670.19 | -6,527.00 | 126,538.25 | 9,633,055.00 | 9,015.10 | 1.31 |
| 2008 | 4755 | 1,713.39 | 1,883.41 | 2,264.60 | 1,222.75 | 1,918.10 | 126,964.68 | -6,527.00 | 129,439.92 | 9,633,055.00 | 9,333.17 | 1.34 |
| 2009 | 4922 | 1,837.03 | 2,019.32 | 2,428.02 | 1,311.65 | 2,057.55 | 129,183.42 | -6,527.00 | 132,310.00 | 9,633,055.00 | 9,662.56 | 1.37 |
| 2010 | 5094 | 1,969.66 | 2,165.11 | 2,603.31 | 1,407.03 | 2,207.18 | 131,336.89 | -6,527.00 | 135,162.19 | 9,633,055.00 | 10,003.68 | 1.40 |

Cuadro N° A.5.159
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDAC DE 3.5%
TRAMO 4
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI $\frac{4}{5+6}$ |
|------|-------|------------------------------------|------------|-----------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|------------------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 53,596.03 | 58,914.39 | 918.07 | 38,814.42 | 60,887.45 | 67,426.67 | -153,873.00 | 126,684.04 | 15,309,460.00 | 5108.90 | 0.83 |
| 1996 | 3147 | 57,205.64 | 62,882.18 | 983.98 | 41,428.51 | 64,988.12 | 71,734.34 | -153,873.00 | 145,349.77 | 15,309,460.00 | 5,261.66 | 0.95 |
| 1997 | 3257 | 61,081.53 | 67,142.68 | 1,054.66 | 44,235.45 | 69,391.30 | 76,386.54 | -153,873.00 | 165,419.16 | 15,309,460.00 | 5,417.64 | 1.08 |
| 1998 | 3371 | 65,245.03 | 71,719.33 | 1,130.43 | 47,250.67 | 74,121.22 | 81,314.99 | -153,873.00 | 186,908.66 | 15,309,460.00 | 5,576.79 | 1.22 |
| 1999 | 3489 | 69,719.31 | 76,637.59 | 1,211.67 | 50,490.95 | 79,204.20 | 86,577.00 | -153,873.00 | 209,967.73 | 15,309,460.00 | 5,739.00 | 1.37 |
| 2000 | 3611 | 74,529.59 | 81,925.20 | 1,298.78 | 53,974.57 | 84,668.89 | 92,189.19 | -153,873.00 | 234,713.23 | 15,309,460.00 | 5,904.17 | 1.53 |
| 2001 | 3738 | 79,703.32 | 87,612.32 | 1,392.18 | 57,721.41 | 90,546.47 | 98,168.75 | -153,873.00 | 261,271.46 | 15,309,460.00 | 6,072.17 | 1.71 |
| 2002 | 3868 | 87,761.67 | 96,470.30 | 1,492.36 | 63,557.29 | 99,701.11 | 104,583.14 | -153,873.00 | 299,692.86 | 15,309,460.00 | 6,203.20 | 1.96 |
| 2003 | 4004 | 94,163.65 | 103,507.55 | 1,599.77 | 68,193.62 | 106,974.03 | 111,404.10 | -153,873.00 | 331,969.72 | 15,309,460.00 | 6,369.81 | 2.17 |
| 2004 | 4144 | 101,072.31 | 111,101.76 | 1,714.95 | 73,196.90 | 114,822.58 | 117,512.41 | -153,873.00 | 365,547.90 | 15,309,460.00 | 6,537.94 | 2.39 |
| 2005 | 4289 | 108,531.41 | 119,301.03 | 1,838.47 | 78,598.80 | 123,296.44 | 119,938.57 | -153,873.00 | 397,631.72 | 15,309,460.00 | 6,707.23 | 2.60 |
| 2006 | 4439 | 116,588.87 | 128,158.04 | 1,970.94 | 84,434.04 | 132,450.07 | 122,328.57 | -153,873.00 | 432,057.53 | 15,309,460.00 | 6,877.29 | 2.82 |
| 2007 | 4594 | 125,297.29 | 137,730.59 | 2,113.02 | 90,740.70 | 142,343.21 | 124,670.19 | -153,873.00 | 469,022.01 | 15,309,460.00 | 7,047.64 | 3.06 |
| 2008 | 4755 | 134,714.39 | 148,082.16 | 2,265.41 | 97,560.60 | 153,041.46 | 126,964.68 | -153,873.00 | 508,755.70 | 15,309,460.00 | 7,217.78 | 3.32 |
| 2009 | 4922 | 144,903.65 | 159,282.51 | 2,428.86 | 104,939.70 | 164,616.91 | 129,183.42 | -153,873.00 | 551,482.06 | 15,309,460.00 | 7,387.08 | 3.60 |
| 2010 | 5094 | 155,934.94 | 171,408.43 | 2,604.19 | 112,928.59 | 177,148.93 | 131,336.89 | -153,873.00 | 597,488.97 | 15,309,460.00 | 7,554.85 | 3.90 |

Cuadro N° A.5.160
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{er} CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 7%
TRAMO 4
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 52,901.81 | 58,151.28 | 69,920.95 | 38,311.66 | 60,098.78 | 67,408.85 | -167,532.00 | 179,261.34 | 8,376,570.00 | 5130.84 | 2.14 |
| 1996 | 3253 | 60,152.41 | 66,121.37 | 79,504.12 | 43,562.58 | 68,335.78 | 76,190.61 | -167,532.00 | 226,334.87 | 8,376,570.00 | 5,437.56 | 2.70 |
| 1997 | 3481 | 68,499.45 | 75,296.68 | 90,536.45 | 49,607.53 | 77,818.38 | 86,175.83 | -167,532.00 | 280,402.32 | 8,376,570.00 | 5,756.97 | 3.35 |
| 1998 | 3725 | 78,124.34 | 85,876.66 | 103,257.74 | 56,577.91 | 88,752.68 | 97,534.08 | -167,532.00 | 342,591.41 | 8,376,570.00 | 6,088.37 | 4.09 |
| 1999 | 3986 | 92,084.87 | 101,222.50 | 121,709.46 | 66,688.17 | 104,612.46 | 110,459.14 | -167,532.00 | 429,244.60 | 8,376,570.00 | 6,385.49 | 5.12 |
| 2000 | 4265 | 105,876.37 | 116,382.54 | 139,937.77 | 76,676.02 | 120,280.21 | 119,520.74 | -167,532.00 | 511,141.64 | 8,376,570.00 | 6,722.53 | 6.10 |
| 2001 | 4563 | 121,928.67 | 134,027.71 | 161,154.19 | 88,301.14 | 138,516.32 | 124,198.20 | -167,532.00 | 600,594.24 | 8,376,570.00 | 7,063.56 | 7.16 |
| 2002 | 4882 | 140,651.37 | 154,608.27 | 185,900.08 | 101,860.18 | 159,786.13 | 128,668.56 | -167,532.00 | 703,942.59 | 8,376,570.00 | 7,405.03 | 8.40 |
| 2003 | 5224 | 162,537.98 | 178,666.70 | 214,827.73 | 117,710.54 | 184,650.28 | 132,839.85 | -167,532.00 | 823,701.08 | 8,376,570.00 | 7,742.25 | 9.82 |
| 2004 | 5590 | 188,185.89 | 206,859.67 | 248,726.71 | 136,284.84 | 213,787.43 | 128,835.80 | -167,532.00 | 955,148.34 | 8,376,570.00 | 8,069.16 | 11.39 |
| 2005 | 5981 | 218,321.95 | 239,986.14 | 288,557.69 | 158,109.47 | 248,023.32 | 101,936.91 | -167,532.00 | 1,087,403.49 | 8,376,570.00 | 8,377.87 | 12.97 |
| 2006 | 6400 | 253,835.56 | 279,023.78 | 335,496.20 | 183,828.54 | 288,368.33 | 67,950.67 | -167,532.00 | 1,240,971.08 | 8,376,570.00 | 8,658.24 | 14.80 |
| 2007 | 6848 | 295,821.89 | 325,176.44 | 390,989.74 | 214,235.18 | 336,066.65 | 25,626.85 | -167,532.00 | 1,420,384.75 | 8,376,570.00 | 8,897.15 | 16.94 |
| 2008 | 7327 | 444,662.24 | 488,786.28 | 587,712.88 | 322,025.85 | 505,155.81 | -26,481.59 | -167,532.00 | 2,154,329.46 | 8,376,570.00 | 7,502.75 | 25.70 |
| 2009 | 7840 | 543,038.90 | 596,924.91 | 717,737.79 | 393,270.55 | 616,916.02 | -90,048.07 | -167,532.00 | 2,610,308.09 | 8,376,570.00 | 6,982.09 | 31.14 |
| 2010 | 8389 | 666,139.82 | 732,241.20 | 880,440.87 | 482,420.64 | 756,764.07 | -157,408.32 | -167,532.00 | 3,193,066.28 | 8,376,570.00 | 6,144.81 | 38.09 |

Cuadro N° A.5.161

CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4° CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 7%

TRAMO 4

(Cantidades de N\$ a febrero de 1995)

| Año | TPDac | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|-----------|----------|----------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 694.22 | 763.11 | 917.56 | 502.76 | 788.67 | 67,408.85 | -6,527.00 | 64,548.18 | 9,633,055.00 | 5950.27 | 0.67 |
| 1996 | 3253 | 795.70 | 874.66 | 1,051.69 | 576.25 | 903.95 | 76,190.61 | -6,527.00 | 73,865.87 | 9,633,055.00 | 6,369.08 | 0.77 |
| 1997 | 3481 | 912.09 | 1,002.60 | 1,205.52 | 660.54 | 1,036.17 | 86,175.83 | -6,527.00 | 84,465.74 | 9,633,055.00 | 6,817.55 | 0.88 |
| 1998 | 3725 | 1,045.59 | 1,149.34 | 1,381.96 | 757.22 | 1,187.83 | 97,534.08 | -6,527.00 | 96,529.01 | 9,633,055.00 | 7,297.79 | 1.00 |
| 1999 | 3986 | 1,198.73 | 1,317.68 | 1,584.37 | 868.12 | 1,361.81 | 110,459.14 | -6,527.00 | 110,262.85 | 9,633,055.00 | 7,812.09 | 1.14 |
| 2000 | 4265 | 1,374.44 | 1,510.82 | 1,816.60 | 995.37 | 1,561.42 | 119,520.74 | -6,527.00 | 120,252.39 | 9,633,055.00 | 8,362.90 | 1.25 |
| 2001 | 4563 | 1,576.06 | 1,732.46 | 2,083.09 | 1,141.39 | 1,790.48 | 124,198.20 | -6,527.00 | 125,994.68 | 9,633,055.00 | 8,952.83 | 1.31 |
| 2002 | 4882 | 1,807.47 | 1,986.82 | 2,388.94 | 1,308.97 | 2,053.36 | 128,668.56 | -6,527.00 | 131,687.12 | 9,633,055.00 | 9,584.73 | 1.37 |
| 2003 | 5224 | 2,073.09 | 2,278.81 | 2,740.02 | 1,501.34 | 2,355.12 | 132,839.85 | -6,527.00 | 137,261.24 | 9,633,055.00 | 10,261.61 | 1.42 |
| 2004 | 5590 | 2,378.06 | 2,614.04 | 3,143.10 | 1,722.20 | 2,701.58 | 128,835.80 | -6,527.00 | 134,867.78 | 9,633,055.00 | 10,986.74 | 1.40 |
| 2005 | 5981 | 2,728.27 | 2,998.99 | 3,605.97 | 1,975.82 | 3,099.43 | 147,361.85 | -6,527.00 | 155,243.32 | 9,633,055.00 | 11,763.63 | 1.61 |
| 2006 | 6400 | 3,130.50 | 3,441.14 | 4,137.61 | 2,267.12 | 3,556.39 | 168,562.36 | -6,527.00 | 178,568.12 | 9,633,055.00 | 12,596.04 | 1.85 |
| 2007 | 6848 | 3,592.61 | 3,949.10 | 4,748.37 | 2,601.78 | 4,081.36 | 192,824.18 | -6,527.00 | 205,270.40 | 9,633,055.00 | 13,488.03 | 2.13 |
| 2008 | 7327 | 4,123.62 | 4,532.81 | 5,450.22 | 2,986.34 | 4,684.61 | 221,379.36 | -6,527.00 | 236,629.96 | 9,633,055.00 | 14,443.96 | 2.45 |
| 2009 | 7840 | 4,733.98 | 5,203.74 | 6,256.93 | 3,428.36 | 5,378.01 | 254,119.19 | -6,527.00 | 272,593.21 | 9,633,055.00 | 15,468.52 | 2.83 |
| 2010 | 8389 | 5,435.74 | 5,975.13 | 7,184.45 | 3,936.58 | 6,175.24 | 287,490.20 | -6,527.00 | 309,670.34 | 9,633,055.00 | 16,566.78 | 3.21 |

Cuadro N° A.5.162

**CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDAC DE 7%**

TRAMO 4

(Cantidades de N\$ a febrero de 1995)

| Año | TPDAc | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|-----------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 53,596.03 | 58,914.39 | 918.07 | 38,814.42 | 60,887.45 | 67,408.85 | -153,873.00 | 126,666.22 | 15,309,460.00 | 5108.90 | 0.83 |
| 1996 | 3253 | 60,948.12 | 66,996.03 | 1,052.23 | 44,138.83 | 69,239.74 | 76,190.61 | -153,873.00 | 164,692.54 | 15,309,460.00 | 5,412.40 | 1.08 |
| 1997 | 3481 | 69,411.54 | 76,299.28 | 1,206.09 | 50,268.06 | 78,854.55 | 86,175.83 | -153,873.00 | 208,342.35 | 15,309,460.00 | 5,728.12 | 1.36 |
| 1998 | 3725 | 79,169.93 | 87,026.00 | 1,382.57 | 57,335.12 | 89,940.51 | 97,534.08 | -153,873.00 | 258,515.21 | 15,309,460.00 | 6,055.28 | 1.69 |
| 1999 | 3986 | 93,283.60 | 102,540.18 | 1,585.04 | 67,556.29 | 105,974.27 | 110,459.14 | -153,873.00 | 327,525.52 | 15,309,460.00 | 6,347.55 | 2.14 |
| 2000 | 4265 | 107,250.81 | 117,893.36 | 1,817.32 | 77,671.39 | 121,841.63 | 119,520.74 | -153,873.00 | 392,122.24 | 15,309,460.00 | 6,679.01 | 2.56 |
| 2001 | 4563 | 123,504.73 | 135,760.17 | 2,083.87 | 89,442.53 | 140,306.80 | 124,198.20 | -153,873.00 | 461,423.30 | 15,309,460.00 | 7,013.65 | 3.01 |
| 2002 | 4882 | 142,458.84 | 156,595.09 | 2,389.78 | 103,169.15 | 161,839.49 | 128,668.56 | -153,873.00 | 541,247.91 | 15,309,460.00 | 7,347.77 | 3.53 |
| 2003 | 5224 | 164,611.07 | 180,945.51 | 2,740.92 | 119,211.88 | 187,005.40 | 132,839.85 | -153,873.00 | 633,481.64 | 15,309,460.00 | 7,676.56 | 4.14 |
| 2004 | 5590 | 190,563.95 | 209,473.70 | 3,144.08 | 138,007.04 | 216,489.01 | 128,835.80 | -153,873.00 | 732,640.58 | 15,309,460.00 | 7,993.78 | 4.78 |
| 2005 | 5981 | 221,050.22 | 242,985.14 | 3,607.02 | 160,085.29 | 251,122.75 | 147,361.85 | -153,873.00 | 872,339.26 | 15,309,460.00 | 8,291.38 | 5.69 |
| 2006 | 6400 | 256,966.06 | 282,464.92 | 4,138.75 | 186,095.66 | 291,924.72 | 168,562.36 | -153,873.00 | 1,036,279.48 | 15,309,460.00 | 8,558.97 | 6.77 |
| 2007 | 6848 | 299,414.50 | 329,125.54 | 4,749.62 | 216,836.96 | 340,148.01 | 192,824.18 | -153,873.00 | 1,229,225.81 | 15,309,460.00 | 8,783.20 | 8.02 |
| 2008 | 7327 | 448,785.86 | 493,319.09 | 5,451.97 | 325,012.18 | 509,840.43 | 221,379.36 | -153,873.00 | 1,849,915.89 | 15,309,460.00 | 7,371.93 | 12.08 |
| 2009 | 7840 | 547,772.88 | 602,128.64 | 6,258.94 | 396,698.91 | 622,294.03 | 254,119.19 | -153,873.00 | 2,275,399.58 | 15,309,460.00 | 6,831.88 | 14.86 |
| 2010 | 8389 | 671,575.56 | 738,216.33 | 7,186.75 | 486,357.22 | 762,939.31 | 287,490.20 | -153,873.00 | 2,799,892.37 | 15,309,460.00 | 5,972.31 | 18.28 |

Cuadro N° A.5.163
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{er} CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 10%
TRAMO 4
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAc | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 34.658.20 | 38.097.35 | 45.808.15 | 25.099.58 | 39.373.24 | 67.408.85 | -167.532.00 | 82.913.38 | 8,376,570.00 | 7484.37 | 0.99 |
| 1996 | 3345 | 40.982.43 | 45.049.13 | 54.166.92 | 29.679.61 | 46.557.84 | 80.116.96 | -167.532.00 | 129.020.89 | 8,376,570.00 | 8,203.95 | 1.54 |
| 1997 | 3679 | 48.610.29 | 53.433.91 | 64.248.72 | 35.203.73 | 55.223.42 | 95.348.99 | -167.532.00 | 184.537.06 | 8,376,570.00 | 8,988.39 | 2.20 |
| 1998 | 4047 | 58.181.32 | 63.954.68 | 76.898.81 | 42.135.10 | 66.096.54 | 113.620.50 | -167.532.00 | 253.354.95 | 8,376,570.00 | 9,836.83 | 3.02 |
| 1999 | 4452 | 70.058.44 | 77.010.37 | 92.596.86 | 50.736.55 | 79.589.47 | 122.509.49 | -167.532.00 | 324.969.19 | 8,376,570.00 | 10,753.96 | 3.87 |
| 2000 | 4897 | 84.617.13 | 93.013.73 | 111.839.16 | 61.280.00 | 96.128.77 | 128.856.78 | -167.532.00 | 408.203.58 | 8,376,570.00 | 11,745.49 | 4.87 |
| 2001 | 5387 | 102.524.98 | 112.698.59 | 135.508.06 | 74.248.93 | 116.472.88 | 134.599.03 | -167.532.00 | 508.520.48 | 8,376,570.00 | 12,813.94 | 6.06 |
| 2002 | 5925 | 124.635.44 | 137.003.08 | 164.731.57 | 90.261.40 | 141.591.33 | 106.078.36 | -167.532.00 | 596.769.18 | 8,376,570.00 | 13,960.48 | 7.11 |
| 2003 | 6518 | 152.047.00 | 167.134.70 | 200.961.55 | 110.112.94 | 172.732.07 | 57.420.25 | -167.532.00 | 692.876.50 | 8,376,570.00 | 15,184.28 | 8.26 |
| 2004 | 7169 | 189.687.95 | 208.510.78 | 250.711.78 | 137.372.64 | 215.493.84 | -8.549.53 | -167.532.00 | 825.695.46 | 8,376,570.00 | 16,425.74 | 9.84 |
| 2005 | 7886 | 250.408.86 | 275.257.06 | 330.966.90 | 181.346.92 | 284.475.46 | -96.175.76 | -167.532.00 | 1,058.747.44 | 8,376,570.00 | 17,501.75 | 12.61 |
| 2006 | 8675 | 330.594.83 | 363.399.92 | 436.949.07 | 239.417.86 | 375.570.24 | -184.058.95 | -167.532.00 | 1,394.340.97 | 8,376,570.00 | 18,493.97 | 16.61 |
| 2007 | 9543 | 437.394.79 | 480.797.68 | 578.107.05 | 316.762.74 | 496.899.68 | -273.458.81 | -167.532.00 | 1,868.971.13 | 8,376,570.00 | 19,316.21 | 22.26 |
| 2008 | 10497 | 581.212.97 | 638.887.01 | 768.192.16 | 420.916.33 | 660.283.44 | -330.853.61 | -167.532.00 | 2,571.106.30 | 8,376,570.00 | 19,834.43 | 30.62 |
| 2009 | 11547 | 634.860.16 | 697.857.64 | 839.097.76 | 459.767.80 | 721.229.00 | -395.234.51 | -167.532.00 | 2,790.045.85 | 8,376,570.00 | 22,107.57 | 33.22 |
| 2010 | 12701 | 685.687.80 | 753.728.93 | 906.276.75 | 496.577.35 | 778.971.44 | -471.165.10 | -167.532.00 | 2,982.545.17 | 8,376,570.00 | 24,787.89 | 35.50 |

Cuadro N° A.5.164
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4° CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 10%
TRAMO 4
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI $\frac{4}{5+6}$ |
|------|-------|------------------------------------|------------|------------|-----------|-----------|---|--|--------------------------------|------------------|--------------------------------|------------------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 4,364.96 | 4,798.10 | 5,769.22 | 3,161.12 | 4,958.78 | 67,408.85 | -6,527.00 | 83,934.03 | 9,633,055.00 | 5891.89 | 0.87 |
| 1996 | 3345 | 5,295.24 | 5,820.69 | 6,998.78 | 3,834.83 | 6,015.63 | 80,116.96 | -6,527.00 | 101,555.14 | 9,633,055.00 | 6,477.83 | 1.05 |
| 1997 | 3679 | 6,425.48 | 7,063.09 | 8,492.62 | 4,653.35 | 7,299.63 | 95,348.99 | -6,527.00 | 122,756.17 | 9,633,055.00 | 7,121.65 | 1.27 |
| 1998 | 4047 | 7,799.22 | 8,573.14 | 10,308.31 | 5,648.22 | 8,860.26 | 113,620.50 | -6,527.00 | 148,282.66 | 9,633,055.00 | 7,828.96 | 1.54 |
| 1999 | 4452 | 9,469.70 | 10,409.38 | 12,516.18 | 6,857.99 | 10,757.99 | 122,509.49 | -6,527.00 | 165,993.73 | 9,633,055.00 | 8,605.89 | 1.72 |
| 2000 | 4897 | 11,502.03 | 12,643.38 | 15,202.32 | 8,329.80 | 13,066.81 | 128,856.78 | -6,527.00 | 183,074.12 | 9,633,055.00 | 9,459.17 | 1.90 |
| 2001 | 5387 | 13,975.98 | 15,362.82 | 18,472.16 | 10,121.45 | 15,877.33 | 134,599.03 | -6,527.00 | 201,881.77 | 9,633,055.00 | 10,396.10 | 2.09 |
| 2002 | 5925 | 16,989.39 | 18,675.26 | 22,455.00 | 12,303.77 | 19,300.70 | 165,024.00 | -6,527.00 | 248,221.12 | 9,633,055.00 | 11,424.65 | 2.57 |
| 2003 | 6518 | 20,662.41 | 22,712.75 | 27,309.65 | 14,963.78 | 23,473.40 | 197,214.45 | -6,527.00 | 299,809.44 | 9,633,055.00 | 12,553.47 | 3.11 |
| 2004 | 7169 | 25,142.81 | 27,637.74 | 33,231.41 | 18,208.50 | 28,563.33 | 236,435.34 | -6,527.00 | 362,692.14 | 9,633,055.00 | 13,791.96 | 3.76 |
| 2005 | 7886 | 30,612.66 | 33,650.37 | 40,460.94 | 22,169.79 | 34,777.33 | 284,323.79 | -6,527.00 | 439,467.87 | 9,633,055.00 | 15,150.31 | 4.55 |
| 2006 | 8675 | 37,296.70 | 40,997.67 | 49,295.26 | 27,010.39 | 42,370.68 | 330,510.54 | -6,527.00 | 520,954.24 | 9,633,055.00 | 16,639.48 | 5.40 |
| 2007 | 9543 | 45,472.89 | 49,985.18 | 60,101.76 | 32,931.61 | 51,659.19 | 374,771.17 | -6,527.00 | 608,394.81 | 9,633,055.00 | 18,271.28 | 6.30 |
| 2008 | 10497 | 55,485.82 | 60,991.71 | 73,335.89 | 40,183.01 | 63,034.33 | 427,960.09 | -6,527.00 | 714,463.85 | 9,633,055.00 | 20,058.35 | 7.40 |
| 2009 | 11547 | 67,763.77 | 74,488.00 | 89,563.70 | 49,074.74 | 76,982.61 | 476,148.29 | -6,527.00 | 827,494.11 | 9,633,055.00 | 22,014.15 | 8.57 |
| 2010 | 12701 | 82,840.47 | 91,060.77 | 109,490.64 | 59,993.34 | 94,110.41 | 517,143.64 | -6,527.00 | 948,112.29 | 9,633,055.00 | 24,152.86 | 9.82 |

Cuadro N° A.5.165
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDAC DE 10%
TRAMO 4
(Cantidades de N\$ a febrero de 1995)

| Año | TPDac | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|--------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 39,023.16 | 42,895.45 | 51,577.37 | 28,260.70 | 44,332.02 | 67,408.85 | -153,873.00 | 119,624.55 | 15,309,460.00 | 5340.67 | 0.78 |
| 1996 | 3345 | 46,277.67 | 50,869.83 | 61,165.71 | 33,514.44 | 52,573.46 | 80,116.96 | -153,873.00 | 170,645.06 | 15,309,460.00 | 5,826.04 | 1.11 |
| 1997 | 3679 | 55,035.77 | 60,497.00 | 72,741.34 | 39,857.09 | 62,523.05 | 95,348.99 | -153,873.00 | 232,130.24 | 15,309,460.00 | 6,348.54 | 1.52 |
| 1998 | 4047 | 65,980.55 | 72,527.83 | 87,207.11 | 47,783.33 | 74,956.80 | 113,620.50 | -153,873.00 | 308,203.11 | 15,309,460.00 | 6,903.62 | 2.01 |
| 1999 | 4452 | 79,528.14 | 87,419.75 | 105,113.05 | 57,594.54 | 90,347.46 | 122,509.49 | -153,873.00 | 388,639.43 | 15,309,460.00 | 7,491.67 | 2.54 |
| 2000 | 4897 | 96,119.16 | 105,657.11 | 127,041.48 | 69,609.81 | 109,195.58 | 128,856.78 | -153,873.00 | 482,606.92 | 15,309,460.00 | 8,113.40 | 3.15 |
| 2001 | 5387 | 116,500.97 | 128,061.41 | 153,980.23 | 84,370.38 | 132,350.21 | 134,599.03 | -153,873.00 | 595,989.22 | 15,309,460.00 | 8,765.52 | 3.89 |
| 2002 | 5925 | 141,624.84 | 155,678.34 | 187,186.57 | 102,565.17 | 160,892.03 | 165,024.00 | -153,873.00 | 759,097.95 | 15,309,460.00 | 9,442.41 | 4.96 |
| 2003 | 6518 | 172,709.41 | 189,847.45 | 228,271.20 | 125,076.72 | 196,205.47 | 197,214.45 | -153,873.00 | 955,451.69 | 15,309,460.00 | 10,135.27 | 6.24 |
| 2004 | 7169 | 214,830.76 | 236,148.52 | 283,943.19 | 155,581.14 | 244,057.17 | 236,435.34 | -153,873.00 | 1,217,123.13 | 15,309,460.00 | 10,775.12 | 7.94 |
| 2005 | 7886 | 281,021.52 | 308,907.42 | 371,427.84 | 203,516.71 | 319,252.78 | 284,323.79 | -153,873.00 | 1,614,577.07 | 15,309,460.00 | 11,167.74 | 10.54 |
| 2006 | 8675 | 367,891.53 | 404,397.58 | 486,244.33 | 266,428.25 | 417,940.92 | 330,510.54 | -153,873.00 | 2,119,540.16 | 15,309,460.00 | 11,381.61 | 13.83 |
| 2007 | 9543 | 482,867.68 | 530,782.87 | 638,208.81 | 349,694.35 | 548,558.87 | 374,771.17 | -153,873.00 | 2,771,010.74 | 15,309,460.00 | 11,314.83 | 18.09 |
| 2008 | 10497 | 636,698.79 | 699,878.72 | 841,528.05 | 461,099.35 | 723,317.77 | 427,960.09 | -153,873.00 | 3,636,609.77 | 15,309,460.00 | 10,814.59 | 23.74 |
| 2009 | 11547 | 702,623.93 | 772,345.63 | 928,661.46 | 508,842.55 | 798,211.61 | 476,148.29 | -153,873.00 | 4,032,960.47 | 15,309,460.00 | 11,917.16 | 26.32 |
| 2010 | 12701 | 768,528.28 | 844,789.71 | 1,015,767.39 | 556,570.69 | 873,081.85 | 517,143.64 | -153,873.00 | 4,422,008.56 | 15,309,460.00 | 13,247.50 | 28.86 |

Cuadro N° A.5.166
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{ER} CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 15%
TRAMO 4
(CANTIDADES DE N\$ A FEBRERO DE 1995)

| Año | TPDAc | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|--------------|--------------|--------------|--------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 34,658.20 | 38,097.35 | 45,808.15 | 25,099.58 | 39,373.24 | 67,408.85 | -167,532.00 | 82,913.38 | 8,376,570.00 | 5479.52 | 0.99 |
| 1996 | 3497 | 44,361.21 | 48,763.20 | 58,632.69 | 32,126.54 | 50,396.29 | 86,877.87 | -167,532.00 | 153,625.79 | 8,376,570.00 | 6,249.37 | 1.83 |
| 1997 | 4021 | 57,465.46 | 63,167.78 | 75,952.65 | 41,616.67 | 65,283.28 | 112,285.09 | -167,532.00 | 248,238.93 | 8,376,570.00 | 7,110.22 | 2.96 |
| 1998 | 4624 | 75,514.55 | 83,007.89 | 99,808.22 | 54,687.88 | 85,787.84 | 125,098.27 | -167,532.00 | 356,372.64 | 8,376,570.00 | 8,061.46 | 4.25 |
| 1999 | 5318 | 99,893.97 | 109,806.49 | 132,030.63 | 72,343.54 | 113,483.93 | 133,873.05 | -167,532.00 | 493,899.61 | 8,376,570.00 | 9,109.31 | 5.89 |
| 2000 | 6116 | 133,084.47 | 146,290.51 | 175,898.69 | 96,380.21 | 151,189.80 | 91,612.74 | -167,532.00 | 626,924.43 | 8,376,570.00 | 10,247.84 | 7.48 |
| 2001 | 7033 | 179,325.80 | 197,120.38 | 237,016.06 | 129,868.33 | 203,721.97 | 6,343.87 | -167,532.00 | 785,864.41 | 8,376,570.00 | 11,449.55 | 9.37 |
| 2002 | 8088 | 269,493.89 | 296,235.90 | 356,191.68 | 195,168.36 | 306,156.89 | -123,646.30 | -167,532.00 | 1,132,068.41 | 8,376,570.00 | 12,271.17 | 13.49 |
| 2003 | 9301 | 405,546.36 | 445,788.92 | 536,012.85 | 293,698.00 | 460,718.47 | -247,281.49 | -167,532.00 | 1,726,951.12 | 8,376,570.00 | 12,739.14 | 20.59 |
| 2004 | 10696 | 604,269.68 | 664,231.65 | 798,666.30 | 437,614.08 | 686,476.88 | -342,919.35 | -167,532.00 | 2,680,807.24 | 8,376,570.00 | 12,656.24 | 31.96 |
| 2005 | 12301 | 782,758.29 | 860,431.77 | 1,034,575.31 | 566,876.11 | 889,247.77 | -444,084.00 | -167,532.00 | 3,522,273.26 | 8,376,570.00 | 13,426.25 | 41.98 |
| 2006 | 14146 | 1,030,121.48 | 1,132,340.92 | 1,361,516.09 | 746,017.34 | 1,170,263.20 | -575,492.07 | -167,532.00 | 4,697,234.97 | 8,376,570.00 | 13,736.95 | 55.98 |
| 2007 | 16268 | 1,381,272.77 | 1,518,337.13 | 1,825,633.93 | 1,000,322.26 | 1,569,186.49 | -747,507.89 | -167,532.00 | 6,379,712.69 | 8,376,570.00 | 13,163.74 | 76.04 |
| 2008 | 18708 | 1,894,762.21 | 2,082,780.36 | 2,504,314.60 | 1,372,192.99 | 2,152,533.02 | -972,961.75 | -167,532.00 | 8,866,089.42 | 8,376,570.00 | 10,939.90 | 105.71 |
| 2009 | 21514 | 2,674,711.32 | 2,940,124.19 | 3,535,175.84 | 1,937,034.68 | 3,038,589.44 | -1,268,781.88 | -167,532.00 | 12,689,321.59 | 8,376,570.00 | 5,619.20 | 151.38 |
| 2010 | 24741 | 3,921,458.47 | 4,310,586.66 | 5,183,005.47 | 2,839,933.05 | 4,454,948.91 | -1,657,309.99 | -167,532.00 | 18,885,090.56 | 8,376,570.00 | (5,713.04) | 225.61 |

Cuadro N° A.5.167

CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4° CARRIL
TASA DE CRECIMIENTO DEL TPDAC DE 15%

TRAMO 4

(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 4,364.96 | 4,798.10 | 5,769.22 | 3,161.12 | 4,958.78 | 67,408.85 | -6,527.00 | 83,934.03 | 9,633,055.00 | 5891.89 | 0.87 |
| 1996 | 3497 | 5,795.05 | 6,370.09 | 7,659.38 | 4,196.79 | 6,583.43 | 86,877.87 | -6,527.00 | 110,955.61 | 9,633,055.00 | 6,770.57 | 1.15 |
| 1997 | 4021 | 7,698.23 | 8,462.13 | 10,174.83 | 5,575.08 | 8,745.53 | 112,285.09 | -6,527.00 | 146,413.89 | 9,633,055.00 | 7,779.30 | 1.52 |
| 1998 | 4624 | 10,233.45 | 11,248.92 | 13,525.64 | 7,411.10 | 11,625.65 | 125,098.27 | -6,527.00 | 172,616.03 | 9,633,055.00 | 8,936.95 | 1.79 |
| 1999 | 5318 | 13,614.36 | 14,965.32 | 17,994.21 | 9,859.56 | 15,466.51 | 133,873.05 | -6,527.00 | 199,246.02 | 9,633,055.00 | 10,264.99 | 2.07 |
| 2000 | 6116 | 18,128.87 | 19,927.81 | 23,961.06 | 13,128.99 | 20,595.19 | 180,928.78 | -6,527.00 | 270,143.70 | 9,633,055.00 | 11,787.80 | 2.80 |
| 2001 | 7033 | 24,166.09 | 26,564.10 | 31,940.47 | 17,501.16 | 27,453.74 | 234,567.28 | -6,527.00 | 355,665.84 | 9,633,055.00 | 13,532.91 | 3.69 |
| 2002 | 8088 | 32,253.62 | 35,454.16 | 42,629.80 | 23,358.18 | 36,641.52 | 306,339.04 | -6,527.00 | 470,149.31 | 9,633,055.00 | 15,531.34 | 4.87 |
| 2003 | 9301 | 43,109.65 | 47,387.44 | 56,978.26 | 31,220.15 | 48,974.45 | 371,173.46 | -6,527.00 | 592,316.40 | 9,633,055.00 | 17,817.80 | 6.14 |
| 2004 | 10696 | 57,716.16 | 63,443.36 | 76,283.74 | 41,798.23 | 65,568.09 | 449,727.52 | -6,527.00 | 748,010.12 | 9,633,055.00 | 20,430.84 | 7.75 |
| 2005 | 12301 | 77,422.85 | 85,105.55 | 102,330.14 | 56,069.88 | 87,955.75 | 514,867.10 | -6,527.00 | 917,224.26 | 9,633,055.00 | 23,412.74 | 9.50 |
| 2006 | 14146 | 104,096.02 | 114,425.52 | 137,584.17 | 75,386.68 | 118,257.65 | 580,316.17 | -6,527.00 | 1,123,539.19 | 9,633,055.00 | 26,809.13 | 11.63 |
| 2007 | 16268 | 140,334.68 | 154,260.16 | 185,480.93 | 101,630.84 | 159,426.36 | 651,783.23 | -6,527.00 | 1,386,389.20 | 9,633,055.00 | 30,668.03 | 14.35 |
| 2008 | 18708 | 189,788.16 | 208,620.93 | 250,843.75 | 137,445.21 | 215,607.68 | 728,945.68 | -6,527.00 | 1,724,724.40 | 9,633,055.00 | 35,037.82 | 17.84 |
| 2009 | 21514 | 257,630.41 | 283,195.20 | 340,511.07 | 186,576.79 | 292,679.45 | 811,037.38 | -6,527.00 | 2,165,103.29 | 9,633,055.00 | 39,963.68 | 22.38 |
| 2010 | 24741 | 351,281.20 | 386,139.00 | 464,289.60 | 254,398.99 | 399,070.86 | 896,654.65 | -6,527.00 | 2,745,307.30 | 9,633,055.00 | 45,481.15 | 28.36 |

Cuadro N° A.5.168
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDAC DE 15%
TRAMO 4
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAC | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|--------------|--------------|--------------|--------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 39,023.16 | 42,895.45 | 51,577.37 | 28,260.70 | 44,332.02 | 67,408.85 | -153,873.00 | 119,624.55 | 15,309,460.00 | 5340.67 | 0.78 |
| 1996 | 3497 | 50,156.26 | 55,133.29 | 66,292.07 | 36,323.33 | 56,979.72 | 86,877.87 | -153,873.00 | 197,889.53 | 15,309,460.00 | 6,065.04 | 1.29 |
| 1997 | 4021 | 65,163.69 | 71,629.91 | 86,127.47 | 47,191.76 | 74,028.81 | 112,285.09 | -153,873.00 | 302,553.73 | 15,309,460.00 | 6,865.35 | 1.98 |
| 1998 | 4624 | 85,748.00 | 94,256.81 | 113,333.87 | 62,098.98 | 97,413.49 | 125,098.27 | -153,873.00 | 424,076.41 | 15,309,460.00 | 7,735.95 | 2.77 |
| 1999 | 5318 | 113,508.33 | 124,771.81 | 150,024.84 | 82,203.10 | 128,950.44 | 133,873.05 | -153,873.00 | 579,458.57 | 15,309,460.00 | 8,676.25 | 3.78 |
| 2000 | 6116 | 151,213.35 | 166,218.32 | 199,859.75 | 109,509.20 | 171,785.00 | 180,928.78 | -153,873.00 | 825,641.39 | 15,309,460.00 | 9,671.18 | 5.39 |
| 2001 | 7033 | 203,491.88 | 223,684.48 | 268,956.54 | 147,369.49 | 231,175.71 | 234,567.28 | -153,873.00 | 1,155,372.38 | 15,309,460.00 | 10,680.86 | 7.54 |
| 2002 | 8088 | 301,747.51 | 331,690.06 | 398,821.47 | 218,526.53 | 342,798.41 | 306,339.04 | -153,873.00 | 1,746,050.03 | 15,309,460.00 | 11,245.23 | 11.40 |
| 2003 | 9301 | 448,656.01 | 493,176.36 | 592,991.10 | 324,918.15 | 509,692.92 | 371,173.46 | -153,873.00 | 2,586,735.00 | 15,309,460.00 | 11,367.89 | 16.88 |
| 2004 | 10696 | 661,985.85 | 727,675.02 | 874,950.04 | 479,412.31 | 752,044.97 | 449,727.52 | -153,873.00 | 3,791,922.71 | 15,309,460.00 | 10,820.37 | 24.75 |
| 2005 | 12301 | 860,181.14 | 945,537.32 | 1,136,905.45 | 622,945.99 | 977,203.52 | 514,867.10 | -153,873.00 | 4,903,767.52 | 15,309,460.00 | 10,963.54 | 32.01 |
| 2006 | 14146 | 1,134,217.50 | 1,246,766.44 | 1,499,100.25 | 821,404.02 | 1,288,520.85 | 580,316.17 | -153,873.00 | 6,416,452.23 | 15,309,460.00 | 10,425.80 | 41.88 |
| 2007 | 16268 | 1,521,607.46 | 1,672,597.29 | 2,011,114.86 | 1,101,953.10 | 1,728,612.85 | 651,783.23 | -153,873.00 | 8,533,795.78 | 15,309,460.00 | 8,699.90 | 55.71 |
| 2008 | 18708 | 2,084,550.37 | 2,291,401.29 | 2,755,158.35 | 1,509,638.19 | 2,368,140.70 | 728,945.68 | -153,873.00 | 11,583,961.58 | 15,309,460.00 | 4,903.02 | 75.64 |
| 2009 | 21514 | 2,932,341.73 | 3,223,319.39 | 3,875,686.91 | 2,123,611.47 | 3,331,268.89 | 811,037.38 | -153,873.00 | 16,143,392.76 | 15,309,460.00 | (2,575.64) | 105.46 |
| 2010 | 24741 | 4,272,739.67 | 4,696,725.66 | 5,647,295.07 | 3,094,332.04 | 4,854,019.77 | 896,654.65 | -153,873.00 | 23,307,893.85 | 15,309,460.00 | (16,886.78) | 152.41 |

Cuadro N° A.5.169
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{er} CARRIL
TASA DE CRECIMIENTO DEL TPDAc DE 3.5%
TRAMO 5
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAc | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI $\frac{4}{5+6}$ |
|------|-------|------------------------------------|------------|-----------|-----------|-----------|---|--|--------------------------------|------------------|--------------------------------|------------------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 6,504.36 | 7,149.80 | 8,596.90 | 4,678.54 | 7,339.14 | 12,866.18 | -48,000.00 | -865.08 | 2,399,999.00 | 5642.37 | -0.04 |
| 1996 | 3147 | 7,160.98 | 7,871.57 | 9,464.75 | 5,152.94 | 8,083.32 | 13,688.16 | -48,000.00 | 3,421.71 | 2,399,999.00 | 5,820.55 | 0.14 |
| 1997 | 3257 | 7,874.43 | 8,655.81 | 10,407.72 | 5,668.46 | 8,892.00 | 14,575.88 | -48,000.00 | 8,074.29 | 2,399,999.00 | 6,003.43 | 0.34 |
| 1998 | 3371 | 8,649.50 | 9,507.80 | 11,432.14 | 6,228.56 | 9,770.63 | 15,516.32 | -48,000.00 | 13,104.95 | 2,399,999.00 | 6,191.05 | 0.54 |
| 1999 | 3489 | 9,491.42 | 10,433.26 | 12,544.91 | 6,837.04 | 10,725.13 | 16,520.40 | -48,000.00 | 18,552.16 | 2,399,999.00 | 6,383.43 | 0.77 |
| 2000 | 3611 | 10,405.86 | 11,438.43 | 13,753.53 | 7,497.98 | 11,761.94 | 17,591.30 | -48,000.00 | 24,449.05 | 2,399,999.00 | 6,580.60 | 1.02 |
| 2001 | 3738 | 11,398.97 | 12,530.10 | 15,066.14 | 8,215.86 | 12,888.07 | 18,732.31 | -48,000.00 | 30,831.45 | 2,399,999.00 | 6,782.55 | 1.28 |
| 2002 | 3868 | 12,477.49 | 13,715.64 | 16,491.62 | 8,995.54 | 14,111.14 | 19,956.28 | -48,000.00 | 37,747.72 | 2,399,999.00 | 6,989.27 | 1.57 |
| 2003 | 4004 | 13,648.72 | 15,003.09 | 18,039.65 | 9,842.32 | 15,439.46 | 21,257.84 | -48,000.00 | 45,231.07 | 2,399,999.00 | 7,200.73 | 1.88 |
| 2004 | 4144 | 14,920.63 | 16,401.21 | 19,720.74 | 10,761.95 | 16,882.07 | 22,423.41 | -48,000.00 | 53,110.03 | 2,399,999.00 | 7,416.88 | 2.21 |
| 2005 | 4289 | 16,301.91 | 17,919.56 | 21,546.39 | 11,760.75 | 18,448.86 | 22,886.37 | -48,000.00 | 60,863.84 | 2,399,999.00 | 7,637.64 | 2.53 |
| 2006 | 4439 | 17,802.05 | 19,568.55 | 23,529.12 | 12,845.55 | 20,150.57 | 23,342.42 | -48,000.00 | 69,238.27 | 2,399,999.00 | 7,862.93 | 2.88 |
| 2007 | 4594 | 19,431.38 | 21,359.56 | 25,682.62 | 14,023.87 | 21,998.98 | 23,789.24 | -48,000.00 | 78,285.65 | 2,399,999.00 | 8,092.60 | 3.25 |
| 2008 | 4755 | 21,201.21 | 23,305.01 | 28,021.81 | 15,303.88 | 24,006.90 | 24,227.07 | -48,000.00 | 88,065.89 | 2,399,999.00 | 8,326.51 | 3.66 |
| 2009 | 4922 | 23,123.90 | 25,418.49 | 30,563.04 | 16,694.53 | 26,188.39 | 24,650.45 | -48,000.00 | 98,638.79 | 2,399,999.00 | 8,564.45 | 4.10 |
| 2010 | 5094 | 25,212.96 | 27,714.85 | 33,324.17 | 18,205.60 | 28,558.78 | 25,061.37 | -48,000.00 | 110,077.73 | 2,399,999.00 | 8,806.21 | 4.57 |

Cuadro N° A.5.170
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4° CARRIL
TASA DE CRECIMIENTO DEL TPDac DE 3.5%
TRAMO 5
(Cantidades de N\$ a febrero de 1995)

| Año | TPDac | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI $\frac{4}{5+6}$ |
|------|-------|------------------------------------|------------|-----------|----------|----------|---|--|--------------------------------|------------------|--------------------------------|------------------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 177.32 | 194.91 | 234.36 | 160.35 | 251.54 | 12,866.18 | -26,852.00 | -12,967.33 | 3,103,501.00 | 5934.01 | -0.42 |
| 1996 | 3147 | 190.01 | 208.86 | 251.14 | 170.67 | 267.72 | 13,688.16 | -26,852.00 | -12,075.44 | 3,103,501.00 | 6,142.24 | -0.39 |
| 1997 | 3257 | 203.61 | 223.81 | 269.11 | 181.68 | 285.00 | 14,575.88 | -26,852.00 | -11,112.89 | 3,103,501.00 | 6,357.79 | -0.36 |
| 1998 | 3371 | 218.19 | 239.84 | 288.38 | 193.45 | 303.46 | 15,516.32 | -26,852.00 | -10,092.37 | 3,103,501.00 | 6,580.93 | -0.32 |
| 1999 | 3489 | 233.81 | 257.01 | 309.03 | 206.01 | 323.16 | 16,520.40 | -26,852.00 | -9,002.57 | 3,103,501.00 | 6,811.93 | -0.29 |
| 2000 | 3611 | 250.56 | 275.42 | 331.17 | 219.43 | 344.22 | 17,591.30 | -26,852.00 | -7,839.90 | 3,103,501.00 | 7,051.06 | -0.25 |
| 2001 | 3738 | 268.51 | 295.15 | 354.89 | 233.77 | 366.71 | 18,732.31 | -26,852.00 | -6,600.66 | 3,103,501.00 | 7,298.61 | -0.21 |
| 2002 | 3868 | 287.75 | 316.30 | 380.32 | 249.09 | 390.74 | 19,956.28 | -26,852.00 | -5,271.51 | 3,103,501.00 | 7,554.87 | -0.17 |
| 2003 | 4004 | 308.37 | 338.97 | 407.58 | 265.46 | 416.42 | 21,257.84 | -26,852.00 | -3,857.36 | 3,103,501.00 | 7,820.17 | -0.12 |
| 2004 | 4144 | 330.48 | 363.27 | 436.80 | 282.95 | 443.86 | 22,423.41 | -26,852.00 | -2,571.22 | 3,103,501.00 | 8,094.81 | -0.08 |
| 2005 | 4289 | 354.18 | 389.32 | 468.12 | 301.65 | 473.19 | 22,886.37 | -26,852.00 | -1,979.18 | 3,103,501.00 | 8,379.13 | -0.06 |
| 2006 | 4439 | 379.58 | 417.24 | 501.69 | 321.64 | 504.55 | 23,342.42 | -26,852.00 | -1,384.88 | 3,103,501.00 | 8,673.47 | -0.04 |
| 2007 | 4594 | 406.81 | 447.17 | 537.68 | 343.01 | 538.07 | 23,789.24 | -26,852.00 | -790.02 | 3,103,501.00 | 8,978.20 | -0.03 |
| 2008 | 4755 | 436.00 | 479.26 | 576.26 | 365.85 | 573.91 | 24,227.07 | -26,852.00 | -193.65 | 3,103,501.00 | 9,293.66 | -0.01 |
| 2009 | 4922 | 467.29 | 513.66 | 617.62 | 390.29 | 612.23 | 24,650.45 | -26,852.00 | 399.53 | 3,103,501.00 | 9,620.26 | 0.01 |
| 2010 | 5094 | 500.84 | 550.53 | 661.96 | 416.41 | 653.22 | 25,061.37 | -26,852.00 | 992.33 | 3,103,501.00 | 9,958.39 | 0.03 |

Cuadro N° A.5.171
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDac DE 3.5%
TRAMO 5
(Cantidades de N\$ a febrero de 1995)

| Año | TPDac | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|-----------|-----------|-----------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 6,681.68 | 7,344.71 | 8,831.26 | 4,838.90 | 7,590.68 | 12,866.18 | -79,903.00 | -31,749.59 | 5,192,101.00 | 5624.26 | -0.61 |
| 1996 | 3147 | 7,350.99 | 8,080.43 | 9,715.88 | 5,323.61 | 8,351.04 | 13,688.16 | -79,903.00 | -27,392.89 | 5,192,101.00 | 5,801.18 | -0.53 |
| 1997 | 3257 | 8,078.04 | 8,879.62 | 10,676.83 | 5,850.14 | 9,177.00 | 14,575.88 | -79,903.00 | -22,665.49 | 5,192,101.00 | 5,982.72 | -0.44 |
| 1998 | 3371 | 8,867.69 | 9,747.64 | 11,720.52 | 6,422.01 | 10,074.08 | 15,516.32 | -79,903.00 | -17,554.74 | 5,192,101.00 | 6,168.90 | -0.34 |
| 1999 | 3489 | 9,725.24 | 10,690.27 | 12,853.95 | 7,043.05 | 11,048.29 | 16,520.40 | -79,903.00 | -12,021.80 | 5,192,101.00 | 6,359.75 | -0.23 |
| 2000 | 3611 | 10,656.42 | 11,713.86 | 14,084.70 | 7,717.41 | 12,106.16 | 17,591.30 | -79,903.00 | -6,033.16 | 5,192,101.00 | 6,555.27 | -0.12 |
| 2001 | 3738 | 11,667.48 | 12,825.26 | 15,421.03 | 8,449.63 | 13,254.77 | 18,732.31 | -79,903.00 | 447.49 | 5,192,101.00 | 6,755.46 | 0.01 |
| 2002 | 3868 | 12,765.24 | 14,031.94 | 16,871.95 | 9,244.63 | 14,501.88 | 19,956.28 | -79,903.00 | 7,468.92 | 5,192,101.00 | 6,960.30 | 0.14 |
| 2003 | 4004 | 13,957.09 | 15,342.06 | 18,447.23 | 10,107.77 | 15,855.87 | 21,257.84 | -79,903.00 | 15,064.87 | 5,192,101.00 | 7,169.73 | 0.29 |
| 2004 | 4144 | 15,251.11 | 16,764.49 | 20,157.54 | 11,044.91 | 17,325.93 | 22,423.41 | -79,903.00 | 23,064.39 | 5,192,101.00 | 7,383.72 | 0.44 |
| 2005 | 4289 | 16,656.09 | 18,308.88 | 22,014.51 | 12,062.40 | 18,922.05 | 22,886.37 | -79,903.00 | 30,947.29 | 5,192,101.00 | 7,602.16 | 0.60 |
| 2006 | 4439 | 18,181.62 | 19,985.79 | 24,030.81 | 13,167.19 | 20,655.12 | 23,342.42 | -79,903.00 | 39,459.97 | 5,192,101.00 | 7,824.96 | 0.76 |
| 2007 | 4594 | 19,838.18 | 21,806.73 | 26,220.30 | 14,366.88 | 22,537.05 | 23,789.24 | -79,903.00 | 48,655.38 | 5,192,101.00 | 8,051.97 | 0.94 |
| 2008 | 4755 | 21,637.20 | 23,784.27 | 28,598.07 | 15,669.73 | 24,580.81 | 24,227.07 | -79,903.00 | 58,594.17 | 5,192,101.00 | 8,283.03 | 1.13 |
| 2009 | 4922 | 23,591.18 | 25,932.15 | 31,180.66 | 17,084.81 | 26,800.62 | 24,650.45 | -79,903.00 | 69,336.88 | 5,192,101.00 | 8,517.93 | 1.33 |
| 2010 | 5094 | 25,713.80 | 28,265.39 | 33,986.13 | 18,622.01 | 29,212.00 | 25,061.37 | -79,903.00 | 80,957.70 | 5,192,101.00 | 8,756.41 | 1.56 |

Cuadro N° A.5.172
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{er} CARRIL
TASA DE CRECIMIENTO DEL TPDac DE 7%
TRAMO 5
(Cantidades de N\$ a febrero de 1995)

| Año | TPDac | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|------------|-----------|-----------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 6,504.36 | 7,149.80 | 8,596.90 | 4,710.48 | 7,389.24 | 12,862.78 | -48,000.00 | -786.43 | 2,399,999.00 | 5641.33 | -0.03 |
| 1996 | 3253 | 7,849.73 | 8,628.67 | 10,375.08 | 5,684.80 | 8,917.64 | 14,538.49 | -48,000.00 | 7,994.42 | 2,399,999.00 | 5,996.15 | 0.33 |
| 1997 | 3481 | 9,433.23 | 10,369.29 | 12,468.00 | 6,831.58 | 10,716.56 | 16,443.85 | -48,000.00 | 18,262.52 | 2,399,999.00 | 6,369.29 | 0.76 |
| 1998 | 3725 | 11,296.16 | 12,417.08 | 14,930.25 | 8,180.72 | 12,832.93 | 18,611.20 | -48,000.00 | 30,268.34 | 2,399,999.00 | 6,760.91 | 1.26 |
| 1999 | 3986 | 13,487.27 | 14,825.62 | 17,826.26 | 9,767.53 | 15,322.13 | 21,077.53 | -48,000.00 | 44,306.34 | 2,399,999.00 | 7,170.96 | 1.84 |
| 2000 | 4265 | 16,064.23 | 17,658.29 | 21,232.24 | 11,633.77 | 18,249.67 | 22,806.64 | -48,000.00 | 59,644.85 | 2,399,999.00 | 7,599.15 | 2.48 |
| 2001 | 4563 | 19,095.38 | 20,990.22 | 25,238.53 | 13,828.93 | 21,693.19 | 23,699.18 | -48,000.00 | 76,545.43 | 2,399,999.00 | 8,044.85 | 3.18 |
| 2002 | 4882 | 22,661.91 | 24,910.66 | 29,952.43 | 16,411.83 | 25,744.92 | 24,552.20 | -48,000.00 | 96,233.95 | 2,399,999.00 | 8,507.02 | 4.00 |
| 2003 | 5224 | 26,835.05 | 29,497.91 | 35,468.10 | 19,434.03 | 30,485.80 | 25,348.16 | -48,000.00 | 119,069.04 | 2,399,999.00 | 8,985.31 | 4.94 |
| 2004 | 5590 | 31,347.86 | 34,458.52 | 41,432.70 | 22,702.22 | 35,612.54 | 24,584.11 | -48,000.00 | 142,137.96 | 2,399,999.00 | 9,495.72 | 5.90 |
| 2005 | 5981 | 36,629.80 | 40,264.60 | 48,413.88 | 26,527.42 | 41,613.07 | 19,451.34 | -48,000.00 | 164,900.11 | 2,399,999.00 | 10,021.27 | 6.84 |
| 2006 | 6400 | 42,819.61 | 47,068.62 | 56,594.98 | 31,010.10 | 48,644.96 | 12,966.17 | -48,000.00 | 191,104.45 | 2,399,999.00 | 10,559.14 | 7.93 |
| 2007 | 6848 | 50,083.51 | 55,053.32 | 66,195.70 | 36,270.64 | 56,897.07 | 4,890.05 | -48,000.00 | 221,390.29 | 2,399,999.00 | 11,105.46 | 9.18 |
| 2008 | 7327 | 58,621.42 | 64,438.46 | 77,480.31 | 42,453.83 | 66,596.51 | -5,053.15 | -48,000.00 | 256,537.37 | 2,399,999.00 | 11,655.07 | 10.64 |
| 2009 | 7840 | 68,674.82 | 75,489.46 | 90,767.93 | 49,734.53 | 78,017.61 | -17,182.74 | -48,000.00 | 297,501.62 | 2,399,999.00 | 12,201.17 | 12.33 |
| 2010 | 8389 | 80,536.69 | 88,528.39 | 106,445.81 | 58,324.94 | 91,493.22 | -30,036.25 | -48,000.00 | 347,292.79 | 2,399,999.00 | 12,734.87 | 14.39 |

Cuadro N°. A.5.173
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4° CARRIL
TASA DE CRECIMIENTO DEL TPDac DE 7%
TRAMO 5
(Cantidades de N\$ a febrero de 1995)

| Año | TPDac | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|-----------|----------|----------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 177.32 | 194.91 | 234.36 | 128.41 | 201.44 | 12,862.78 | -26,852.00 | -13,052.77 | 3,103,501.00 | 5950.27 | -0.42 |
| 1996 | 3253 | 203.14 | 223.30 | 268.50 | 147.12 | 230.78 | 14,538.49 | -26,852.00 | -11,240.67 | 3,103,501.00 | 6,369.08 | -0.36 |
| 1997 | 3481 | 232.74 | 255.83 | 307.61 | 168.55 | 264.40 | 16,443.85 | -26,852.00 | -9,179.01 | 3,103,501.00 | 6,817.55 | -0.30 |
| 1998 | 3725 | 266.66 | 293.12 | 352.45 | 193.12 | 302.94 | 18,611.20 | -26,852.00 | -6,832.50 | 3,103,501.00 | 7,297.79 | -0.22 |
| 1999 | 3986 | 305.55 | 335.87 | 403.84 | 221.28 | 347.11 | 21,077.53 | -26,852.00 | -4,160.82 | 3,103,501.00 | 7,812.09 | -0.13 |
| 2000 | 4265 | 350.12 | 384.86 | 462.76 | 253.56 | 397.75 | 22,806.64 | -26,852.00 | -2,196.31 | 3,103,501.00 | 8,362.90 | -0.07 |
| 2001 | 4563 | 401.22 | 441.03 | 530.30 | 290.56 | 455.80 | 23,699.18 | -26,852.00 | -1,033.90 | 3,103,501.00 | 8,952.83 | -0.03 |
| 2002 | 4882 | 459.81 | 505.43 | 607.73 | 332.99 | 522.36 | 24,552.20 | -26,852.00 | 128.53 | 3,103,501.00 | 9,584.73 | 0.00 |
| 2003 | 5224 | 526.99 | 579.28 | 696.52 | 381.65 | 598.68 | 25,348.16 | -26,852.00 | 1,279.27 | 3,103,501.00 | 10,261.61 | 0.04 |
| 2004 | 5590 | 604.03 | 663.96 | 798.35 | 437.44 | 686.20 | 30,677.32 | -26,852.00 | 7,015.29 | 3,103,501.00 | 10,986.74 | 0.23 |
| 2005 | 5981 | 692.38 | 761.09 | 915.13 | 501.43 | 786.58 | 34,638.94 | -26,852.00 | 11,443.54 | 3,103,501.00 | 11,763.63 | 0.37 |
| 2006 | 6400 | 793.73 | 872.49 | 1,049.08 | 574.82 | 901.71 | 39,140.75 | -26,852.00 | 16,480.59 | 3,103,501.00 | 12,596.04 | 0.53 |
| 2007 | 6848 | 910.00 | 1,000.30 | 1,202.75 | 659.02 | 1,033.80 | 44,258.65 | -26,852.00 | 22,212.52 | 3,103,501.00 | 13,488.03 | 0.71 |
| 2008 | 7327 | 1,043.40 | 1,146.93 | 1,379.07 | 755.63 | 1,185.35 | 50,229.99 | -26,852.00 | 28,888.36 | 3,103,501.00 | 14,443.96 | 0.93 |
| 2009 | 7840 | 1,196.48 | 1,315.21 | 1,581.39 | 866.49 | 1,359.25 | 57,036.41 | -26,852.00 | 36,503.23 | 3,103,501.00 | 15,468.52 | 1.17 |
| 2010 | 8389 | 1,372.17 | 1,508.33 | 1,813.61 | 993.73 | 1,558.85 | 64,002.40 | -26,852.00 | 44,397.09 | 3,103,501.00 | 16,566.78 | 1.42 |

Cuadro N° A.5.174
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDac DE 7%
TRAMO 5
(Cantidades de N\$ a febrero de 1995)

| Año | TPDac 0.07 | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|---------------|------------------------------------|---------------------|-------------------|------------------|-------------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos 31.2% | Camionetas 36.0% | Autobuses 6.4% | Cam. 2 E 8.6% | Cam +2 E 17.7% | | | | | | |
| | | | | | | | | | | | | |
| 1995 | 3041 | 6,681.68 | 7,344.71 | 8,831.26 | 4,838.90 | 7,590.68 | 12,862.78 | -79,903.00 | -31,752.99 | 5,192,101.00 | 5624.26 | -0.61 |
| 1996 | 3253 | 8,052.87 | 8,851.97 | 10,643.58 | 5,831.92 | 9,148.42 | 14,538.49 | -79,903.00 | -22,835.75 | 5,192,101.00 | 5,976.61 | -0.44 |
| 1997 | 3481 | 9,665.97 | 10,625.13 | 12,775.62 | 7,000.13 | 10,980.97 | 16,443.85 | -79,903.00 | -12,411.34 | 5,192,101.00 | 6,346.91 | -0.24 |
| 1998 | 3725 | 11,562.82 | 12,710.21 | 15,282.70 | 8,373.83 | 13,135.87 | 18,611.20 | -79,903.00 | -226.36 | 5,192,101.00 | 6,735.28 | 0.00 |
| 1999 | 3986 | 13,792.82 | 15,161.49 | 18,230.10 | 9,988.81 | 15,669.25 | 21,077.53 | -79,903.00 | 14,016.99 | 5,192,101.00 | 7,141.61 | 0.27 |
| 2000 | 4265 | 16,414.35 | 18,043.16 | 21,695.00 | 11,887.33 | 18,647.42 | 22,806.64 | -79,903.00 | 29,590.90 | 5,192,101.00 | 7,565.53 | 0.57 |
| 2001 | 4563 | 19,496.60 | 21,431.25 | 25,768.82 | 14,119.50 | 22,148.99 | 23,699.18 | -79,903.00 | 46,761.34 | 5,192,101.00 | 8,006.34 | 0.90 |
| 2002 | 4882 | 23,121.71 | 25,416.09 | 30,560.16 | 16,744.82 | 26,267.28 | 24,552.20 | -79,903.00 | 66,759.28 | 5,192,101.00 | 8,462.91 | 1.28 |
| 2003 | 5224 | 27,362.04 | 30,077.19 | 36,164.62 | 19,815.68 | 31,084.48 | 25,348.16 | -79,903.00 | 89,949.16 | 5,192,101.00 | 8,934.77 | 1.73 |
| 2004 | 5590 | 31,951.88 | 35,122.48 | 42,231.05 | 23,139.66 | 36,298.74 | 30,677.32 | -79,903.00 | 119,518.14 | 5,192,101.00 | 9,437.80 | 2.30 |
| 2005 | 5981 | 37,322.19 | 41,025.69 | 49,329.00 | 27,028.85 | 42,399.64 | 34,638.94 | -79,903.00 | 151,841.31 | 5,192,101.00 | 9,954.91 | 2.92 |
| 2006 | 6400 | 43,613.34 | 47,941.12 | 57,644.06 | 31,584.93 | 49,546.67 | 39,140.75 | -79,903.00 | 189,567.87 | 5,192,101.00 | 10,483.08 | 3.64 |
| 2007 | 6848 | 50,993.51 | 56,053.62 | 67,398.46 | 36,929.67 | 57,930.86 | 44,258.65 | -79,903.00 | 233,661.76 | 5,192,101.00 | 11,018.28 | 4.49 |
| 2008 | 7327 | 59,664.82 | 65,585.39 | 78,859.37 | 43,209.46 | 67,781.86 | 50,229.99 | -79,903.00 | 285,427.89 | 5,192,101.00 | 11,555.14 | 5.49 |
| 2009 | 7840 | 69,871.30 | 76,804.66 | 92,349.32 | 50,601.03 | 79,376.87 | 57,036.41 | -79,903.00 | 346,136.58 | 5,192,101.00 | 12,086.61 | 6.65 |
| 2010 | 8389 | 81,908.86 | 90,036.72 | 108,259.42 | 59,318.67 | 93,052.06 | 64,002.40 | -79,903.00 | 416,675.13 | 5,192,101.00 | 12,603.51 | 8.01 |

Cuadro N° A.5.175
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{er} CARRIL
TASA DE CRECIMIENTO DEL TPDAc DE 10%
TRAMO 5
(Cantidades de N\$ a febrero de 1995)

| Año | TPDAc | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 5,770.44 | 6,343.04 | 7,626.86 | 4,178.97 | 6,555.47 | 12,862.78 | -48,000.00 | -4,662.44 | 2,399,999.00 | 7484.37 | -0.19 |
| 1996 | 3345 | 7,576.40 | 8,328.21 | 10,013.81 | 5,486.85 | 8,607.12 | 15,287.71 | -48,000.00 | 7,300.10 | 2,399,999.00 | 8,203.95 | 0.30 |
| 1997 | 3679 | 9,854.70 | 10,832.58 | 13,025.05 | 7,136.80 | 11,195.37 | 18,194.25 | -48,000.00 | 22,238.76 | 2,399,999.00 | 8,988.39 | 0.92 |
| 1998 | 4047 | 12,726.45 | 13,989.30 | 16,820.67 | 9,216.54 | 14,457.80 | 21,680.77 | -48,000.00 | 40,891.53 | 2,399,999.00 | 9,836.83 | 1.70 |
| 1999 | 4452 | 16,345.36 | 17,967.31 | 21,603.80 | 11,837.36 | 18,569.04 | 23,376.95 | -48,000.00 | 61,699.82 | 2,399,999.00 | 10,753.96 | 2.56 |
| 2000 | 4897 | 20,907.34 | 22,981.99 | 27,633.41 | 15,141.16 | 23,751.66 | 24,588.12 | -48,000.00 | 87,003.67 | 2,399,999.00 | 11,745.49 | 3.61 |
| 2001 | 5387 | 26,454.87 | 29,080.00 | 34,965.61 | 19,158.70 | 30,053.89 | 25,683.84 | -48,000.00 | 117,396.92 | 2,399,999.00 | 12,813.94 | 4.87 |
| 2002 | 5925 | 33,012.14 | 36,287.95 | 43,632.38 | 23,907.50 | 37,503.24 | 20,241.60 | -48,000.00 | 146,584.81 | 2,399,999.00 | 13,960.48 | 6.07 |
| 2003 | 6518 | 41,226.49 | 45,317.41 | 54,489.33 | 29,856.36 | 46,835.10 | 10,956.78 | -48,000.00 | 180,681.48 | 2,399,999.00 | 15,184.28 | 7.48 |
| 2004 | 7169 | 51,546.78 | 56,661.79 | 68,129.71 | 37,330.35 | 58,559.40 | -1,631.40 | -48,000.00 | 222,596.63 | 2,399,999.00 | 16,425.74 | 9.21 |
| 2005 | 7886 | 64,558.06 | 70,964.18 | 85,326.77 | 46,753.16 | 73,340.79 | -18,352.01 | -48,000.00 | 274,590.94 | 2,399,999.00 | 17,501.75 | 11.36 |
| 2006 | 8675 | 82,396.00 | 90,572.19 | 108,903.26 | 59,671.45 | 93,605.47 | -35,121.65 | -48,000.00 | 352,026.72 | 2,399,999.00 | 18,493.97 | 14.56 |
| 2007 | 9543 | 108,676.17 | 119,460.16 | 143,637.88 | 78,703.64 | 123,460.90 | -52,180.70 | -48,000.00 | 473,758.03 | 2,399,999.00 | 19,316.21 | 19.58 |
| 2008 | 10497 | 143,383.16 | 157,611.14 | 189,510.25 | 103,838.55 | 162,889.56 | -63,132.63 | -48,000.00 | 646,100.03 | 2,399,999.00 | 19,834.43 | 26.70 |
| 2009 | 11547 | 189,627.57 | 208,444.40 | 250,631.68 | 137,328.91 | 215,425.24 | -75,417.63 | -48,000.00 | 878,040.18 | 2,399,999.00 | 22,107.57 | 36.25 |
| 2010 | 12701 | 251,953.47 | 276,954.93 | 333,008.06 | 182,465.52 | 286,230.20 | -89,906.51 | -48,000.00 | 1,192,705.67 | 2,399,999.00 | 24,787.89 | 49.19 |

Cuadro N° A.5.176
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4° CARRIL
TASA DE CRECIMIENTO DEL TPDac DE 10%
TRAMO 5
(Cantidades de N\$ a febrero de 1995)

| Año | TPDac | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI $\frac{4}{5+6}$ |
|------|-------|------------------------------------|------------|-----------|-----------|-----------|---|--|--------------------------------|------------------|--------------------------------|------------------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 911.24 | 1,001.67 | 1,204.40 | 659.93 | 1,035.21 | 12,862.78 | -26,852.00 | -9,176.77 | 3,103,501.00 | 5891.89 | -0.30 |
| 1996 | 3345 | 1,104.29 | 1,213.86 | 1,459.55 | 799.73 | 1,254.52 | 15,287.71 | -26,852.00 | -5,732.35 | 3,103,501.00 | 6,477.83 | -0.18 |
| 1997 | 3679 | 1,338.43 | 1,471.24 | 1,769.01 | 969.29 | 1,520.51 | 18,194.25 | -26,852.00 | -1,589.26 | 3,103,501.00 | 7,121.65 | -0.05 |
| 1998 | 4047 | 1,622.49 | 1,783.49 | 2,144.47 | 1,175.02 | 1,843.22 | 21,680.77 | -26,852.00 | 3,397.46 | 3,103,501.00 | 7,828.96 | 0.11 |
| 1999 | 4452 | 1,967.22 | 2,162.42 | 2,600.09 | 1,424.66 | 2,234.84 | 23,376.95 | -26,852.00 | 6,914.18 | 3,103,501.00 | 8,605.89 | 0.22 |
| 2000 | 4897 | 2,385.67 | 2,622.40 | 3,153.16 | 1,727.71 | 2,710.23 | 24,588.12 | -26,852.00 | 10,335.30 | 3,103,501.00 | 9,459.17 | 0.33 |
| 2001 | 5387 | 2,893.80 | 3,180.95 | 3,824.76 | 2,095.70 | 3,287.48 | 25,683.84 | -26,852.00 | 14,114.53 | 3,103,501.00 | 10,396.10 | 0.45 |
| 2002 | 5925 | 3,511.03 | 3,859.44 | 4,640.56 | 2,542.70 | 3,988.69 | 31,489.45 | -26,852.00 | 23,179.87 | 3,103,501.00 | 11,424.65 | 0.74 |
| 2003 | 6518 | 4,261.10 | 4,683.93 | 5,631.93 | 3,085.91 | 4,840.80 | 37,631.95 | -26,852.00 | 33,283.63 | 3,103,501.00 | 12,553.47 | 1.07 |
| 2004 | 7169 | 5,173.00 | 5,686.32 | 6,837.18 | 3,746.30 | 5,876.75 | 45,115.98 | -26,852.00 | 45,583.53 | 3,103,501.00 | 13,791.96 | 1.46 |
| 2005 | 7886 | 6,282.16 | 6,905.54 | 8,303.17 | 4,549.56 | 7,136.81 | 54,253.93 | -26,852.00 | 60,579.18 | 3,103,501.00 | 15,150.31 | 1.94 |
| 2006 | 8675 | 7,632.00 | 8,389.33 | 10,087.26 | 5,527.12 | 8,670.29 | 63,067.17 | -26,852.00 | 76,521.16 | 3,103,501.00 | 16,639.48 | 2.45 |
| 2007 | 9543 | 9,275.71 | 10,196.14 | 12,259.75 | 6,717.50 | 10,537.61 | 71,512.87 | -26,852.00 | 93,647.57 | 3,103,501.00 | 18,271.28 | 3.00 |
| 2008 | 10497 | 11,278.57 | 12,397.75 | 14,906.94 | 8,167.98 | 12,812.95 | 81,662.24 | -26,852.00 | 114,374.43 | 3,103,501.00 | 20,058.35 | 3.66 |
| 2009 | 11547 | 13,720.84 | 15,082.36 | 18,134.90 | 9,936.68 | 15,587.48 | 90,857.39 | -26,852.00 | 136,467.65 | 3,103,501.00 | 22,014.15 | 4.37 |
| 2010 | 12701 | 16,701.31 | 18,358.59 | 22,074.20 | 12,095.14 | 18,973.42 | 98,680.02 | -26,852.00 | 160,030.68 | 3,103,501.00 | 24,152.86 | 5.12 |

CUADRO N° A.5.177
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDac DE 10%
TRAMO 5
(Cantidades de N\$ a febrero de 1995)

| Año | TPDac | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|------------|------------|------------|------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 6,681.68 | 7,344.71 | 8,831.26 | 4,838.90 | 7,590.68 | 12,862.78 | -79,903.00 | -31,752.99 | 5,192,101.00 | 5624.26 | -0.61 |
| 1996 | 3345 | 8,680.68 | 9,542.07 | 11,473.36 | 6,286.58 | 9,861.64 | 15,287.71 | -79,903.00 | -18,770.96 | 5,192,101.00 | 6,125.77 | -0.36 |
| 1997 | 3679 | 11,193.13 | 12,303.83 | 14,794.07 | 8,106.10 | 12,715.88 | 18,194.25 | -79,903.00 | -2,595.75 | 5,192,101.00 | 6,663.01 | -0.05 |
| 1998 | 4047 | 14,348.94 | 15,772.80 | 18,965.13 | 10,391.55 | 16,301.03 | 21,680.77 | -79,903.00 | 17,557.22 | 5,192,101.00 | 7,235.93 | 0.34 |
| 1999 | 4452 | 18,312.57 | 20,129.74 | 24,203.89 | 13,262.02 | 20,803.89 | 23,376.95 | -79,903.00 | 40,186.05 | 5,192,101.00 | 7,843.45 | 0.77 |
| 2000 | 4897 | 23,293.01 | 25,604.39 | 30,786.57 | 16,868.88 | 26,461.88 | 24,588.12 | -79,903.00 | 67,699.85 | 5,192,101.00 | 8,483.08 | 1.30 |
| 2001 | 5387 | 29,348.67 | 32,260.95 | 38,790.36 | 21,254.40 | 33,341.38 | 25,683.84 | -79,903.00 | 100,776.60 | 5,192,101.00 | 9,160.32 | 1.94 |
| 2002 | 5925 | 36,523.17 | 40,147.39 | 48,272.94 | 26,450.20 | 41,491.93 | 31,489.45 | -79,903.00 | 144,472.09 | 5,192,101.00 | 9,882.21 | 2.78 |
| 2003 | 6518 | 45,487.59 | 50,001.35 | 60,121.26 | 32,942.26 | 51,675.90 | 37,631.95 | -79,903.00 | 197,957.33 | 5,192,101.00 | 10,626.84 | 3.80 |
| 2004 | 7169 | 56,719.78 | 62,348.11 | 74,966.89 | 41,076.65 | 64,436.15 | 45,115.98 | -79,903.00 | 264,760.56 | 5,192,101.00 | 11,382.60 | 5.09 |
| 2005 | 7886 | 70,840.22 | 77,869.73 | 93,629.94 | 51,302.72 | 80,477.60 | 54,253.93 | -79,903.00 | 348,471.13 | 5,192,101.00 | 12,132.26 | 6.70 |
| 2006 | 8675 | 90,028.00 | 98,961.52 | 118,990.52 | 65,198.57 | 102,275.76 | 63,067.17 | -79,903.00 | 458,618.53 | 5,192,101.00 | 12,785.56 | 8.81 |
| 2007 | 9543 | 117,951.87 | 129,656.29 | 155,897.63 | 85,421.13 | 133,998.51 | 71,512.87 | -79,903.00 | 614,535.30 | 5,192,101.00 | 13,182.66 | 11.81 |
| 2008 | 10497 | 154,661.73 | 170,008.88 | 204,417.19 | 112,006.53 | 175,702.51 | 81,662.24 | -79,903.00 | 818,556.08 | 5,192,101.00 | 13,338.03 | 15.73 |
| 2009 | 11547 | 203,348.41 | 223,526.77 | 268,766.58 | 147,265.58 | 231,012.72 | 90,857.39 | -79,903.00 | 1,084,874.45 | 5,192,101.00 | 13,118.15 | 20.84 |
| 2010 | 12701 | 268,654.78 | 295,313.52 | 355,082.26 | 194,560.67 | 305,203.62 | 98,680.02 | -79,903.00 | 1,437,591.86 | 5,192,101.00 | 12,322.31 | 27.62 |

Cuadro N° A.5.178
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 3^{er} CARRIL
TASA DE CRECIMIENTO DEL TPDac DE 15%
TRAMO 5
(Cantidades de N\$ a febrero de 1995)

| Año | TPDac | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|--------------|--------------|------------|--------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 5,770.44 | 6,343.04 | 7,626.86 | 4,178.97 | 6,555.47 | 12,862.78 | -48,000.00 | -4,662.44 | 2,399,999.00 | 5711.22 | -0.19 |
| 1996 | 3497 | 8,573.50 | 9,424.25 | 11,331.68 | 6,208.96 | 9,739.87 | 16,577.81 | -48,000.00 | 13,856.07 | 2,399,999.00 | 6,487.13 | 0.58 |
| 1997 | 4021 | 12,511.91 | 13,753.47 | 16,537.11 | 9,061.16 | 14,214.07 | 21,425.95 | -48,000.00 | 39,503.67 | 2,399,999.00 | 7,349.15 | 1.64 |
| 1998 | 4624 | 18,040.64 | 19,830.82 | 23,844.46 | 13,065.09 | 20,494.95 | 23,870.93 | -48,000.00 | 71,146.89 | 2,399,999.00 | 8,297.86 | 2.95 |
| 1999 | 5318 | 25,679.86 | 28,228.09 | 33,941.28 | 18,597.44 | 29,173.45 | 25,545.31 | -48,000.00 | 113,165.43 | 2,399,999.00 | 9,334.51 | 4.70 |
| 2000 | 6116 | 35,535.45 | 39,061.65 | 46,967.46 | 25,734.89 | 40,369.83 | 17,481.31 | -48,000.00 | 157,150.60 | 2,399,999.00 | 10,484.62 | 6.52 |
| 2001 | 7033 | 49,270.19 | 54,159.29 | 65,120.72 | 35,681.63 | 55,973.09 | 1,210.52 | -48,000.00 | 213,415.45 | 2,399,999.00 | 11,704.73 | 8.85 |
| 2002 | 8088 | 68,545.10 | 75,346.86 | 90,596.46 | 49,640.58 | 77,870.24 | -23,593.87 | -48,000.00 | 290,405.36 | 2,399,999.00 | 12,957.91 | 12.04 |
| 2003 | 9301 | 100,886.14 | 110,897.12 | 133,341.77 | 73,062.07 | 114,611.09 | -47,185.62 | -48,000.00 | 437,612.57 | 2,399,999.00 | 13,935.14 | 18.13 |
| 2004 | 10696 | 151,483.49 | 166,515.27 | 200,216.50 | 109,704.84 | 172,091.89 | -65,434.98 | -48,000.00 | 686,577.01 | 2,399,999.00 | 14,448.24 | 28.44 |
| 2005 | 12301 | 228,849.11 | 251,557.91 | 302,470.94 | 165,733.27 | 259,982.63 | -84,738.96 | -48,000.00 | 1,075,854.91 | 2,399,999.00 | 14,162.06 | 44.56 |
| 2006 | 14146 | 316,023.11 | 347,382.23 | 417,689.13 | 228,864.97 | 359,016.12 | -109,813.91 | -48,000.00 | 1,511,161.65 | 2,399,999.00 | 13,970.96 | 62.60 |
| 2007 | 16268 | 436,169.73 | 479,451.06 | 576,487.33 | 315,875.54 | 495,507.95 | -142,637.53 | -48,000.00 | 2,112,854.09 | 2,399,999.00 | 12,872.56 | 87.57 |
| 2008 | 18708 | 615,682.77 | 676,777.26 | 813,750.31 | 445,879.47 | 699,442.64 | -185,658.05 | -48,000.00 | 3,017,874.41 | 2,399,999.00 | 9,732.56 | 125.24 |
| 2009 | 21514 | 894,709.33 | 983,491.76 | 1,182,540.62 | 647,951.42 | 1,016,429.06 | -242,105.69 | -48,000.00 | 4,435,016.50 | 2,399,999.00 | 2,788.71 | 184.58 |
| 2010 | 24741 | 1,353,123.24 | 1,487,394.31 | 1,788,427.76 | 979,936.28 | 1,537,207.39 | -316,243.62 | -48,000.00 | 6,781,845.36 | 2,399,999.00 | (11,580.40) | 283.95 |

Cuadro N° A.5.179
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN A UN 4° CARRIL
TASA DE CRECIMIENTO DEL TPDac DE 15%
TRAMO 5
(Cantidades de N\$ a febrero de 1995)

| Año | TPDac | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI $\frac{4}{5+6}$ |
|------|-------|------------------------------------|------------|-----------|-----------|-----------|---|--|--------------------------------|------------------|--------------------------------|------------------------|
| | | Autos | Camionetas | Autobuses | Cam. 2 E | Cam +2 E | | | | | | |
| | | 31.2% | 36.0% | 6.4% | 8.6% | 17.7% | | | | | | |
| 1995 | 3041 | 911.24 | 1,001.67 | 1,204.40 | 659.93 | 1,035.21 | 12,862.78 | -26,852.00 | -9,176.77 | 3,103,501.00 | 5899.58 | -0.30 |
| 1996 | 3497 | 1,207.88 | 1,327.74 | 1,596.46 | 874.75 | 1,372.20 | 16,577.81 | -26,852.00 | -3,895.16 | 3,103,501.00 | 6,780.94 | -0.13 |
| 1997 | 4021 | 1,601.63 | 1,760.56 | 2,116.89 | 1,159.90 | 1,819.52 | 21,425.95 | -26,852.00 | 3,032.45 | 3,103,501.00 | 7,793.29 | 0.10 |
| 1998 | 4624 | 2,124.59 | 2,335.41 | 2,808.09 | 1,538.63 | 2,413.63 | 23,870.93 | -26,852.00 | 8,239.28 | 3,103,501.00 | 8,955.89 | 0.26 |
| 1999 | 5318 | 2,819.61 | 3,099.40 | 3,726.70 | 2,041.97 | 3,203.20 | 25,545.31 | -26,852.00 | 13,584.18 | 3,103,501.00 | 10,290.71 | 0.44 |
| 2000 | 6116 | 3,743.98 | 4,115.50 | 4,948.45 | 2,711.41 | 4,253.33 | 34,524.36 | -26,852.00 | 27,445.03 | 3,103,501.00 | 11,822.84 | 0.88 |
| 2001 | 7033 | 4,974.47 | 5,468.09 | 6,574.80 | 3,602.53 | 5,651.22 | 44,759.52 | -26,852.00 | 44,178.64 | 3,103,501.00 | 13,580.86 | 1.42 |
| 2002 | 8088 | 6,614.09 | 7,270.41 | 8,741.89 | 4,789.95 | 7,513.90 | 58,454.82 | -26,852.00 | 66,533.07 | 3,103,501.00 | 15,597.24 | 2.13 |
| 2003 | 9301 | 8,801.41 | 9,674.78 | 11,632.87 | 6,374.01 | 9,998.79 | 70,826.36 | -26,852.00 | 90,456.21 | 3,103,501.00 | 17,908.82 | 2.90 |
| 2004 | 10696 | 11,723.29 | 12,886.60 | 15,494.74 | 8,490.05 | 13,318.18 | 85,815.85 | -26,852.00 | 120,876.70 | 3,103,501.00 | 20,557.24 | 3.87 |
| 2005 | 12301 | 15,632.54 | 17,183.76 | 20,661.60 | 11,321.13 | 17,759.25 | 98,245.61 | -26,852.00 | 153,951.89 | 3,103,501.00 | 23,589.34 | 4.92 |
| 2006 | 14146 | 20,872.27 | 22,943.44 | 27,586.97 | 15,115.77 | 23,711.82 | 110,734.43 | -26,852.00 | 194,112.70 | 3,103,501.00 | 27,057.56 | 6.20 |
| 2007 | 16268 | 27,910.16 | 30,679.69 | 36,888.97 | 20,212.63 | 31,707.16 | 124,371.59 | -26,852.00 | 244,918.20 | 3,103,501.00 | 31,020.09 | 7.81 |
| 2008 | 18708 | 37,386.55 | 41,096.44 | 49,413.95 | 27,075.46 | 42,472.76 | 139,095.53 | -26,852.00 | 309,688.70 | 3,103,501.00 | 35,540.88 | 9.87 |
| 2009 | 21514 | 50,183.10 | 55,162.79 | 66,327.19 | 36,342.77 | 57,010.20 | 154,760.06 | -26,852.00 | 392,934.11 | 3,103,501.00 | 40,689.05 | 12.50 |
| 2010 | 24741 | 67,521.37 | 74,221.55 | 89,243.23 | 48,899.20 | 76,707.24 | 171,097.33 | -26,852.00 | 500,837.91 | 3,103,501.00 | 46,537.64 | 15.90 |

Cuadro N° A.5.180
CUADRO DE BENEFICIOS NETOS, COSTOS Y CALCULO DE LA TRI PARA LA AMPLIACIÓN EN CONJUNTO
TASA DE CRECIMIENTO DEL TPDac DE 15%
TRAMO 5
(Cantidades de N\$ a febrero de 1995)

| Año | TPDac | Ahorro de tiempo C/P-S/P (1) | | | | | Ahorro de accidentes C/P-S/P (2) | Ahorro por mantenimiento vial C/P-S/P (3) | Beneficio neto 1+2+3 (4) | Inversión (5) | Costos por molestias (6) | TRI 4 5+6 |
|------|-------|------------------------------------|---------------------|-------------------|------------------|-------------------|---|--|--------------------------------|------------------|--------------------------------|-----------------|
| | | Autos 31.2% | Camionetas 36.0% | Autobuses 6.4% | Cam. 2 E 8.6% | Cam +2 E 17.7% | | | | | | |
| | | | | | | | | | | | | |
| 1995 | 3041 | 6,681.68 | 7,344.71 | 8,831.26 | 4,838.90 | 7,590.68 | 12,862.78 | -79,903.00 | -31,752.99 | 5,192,101.00 | 5624.26 | -0.61 |
| 1996 | 3497 | 9,781.37 | 10,751.99 | 12,928.15 | 7,083.70 | 11,112.07 | 16,577.81 | -79,903.00 | -11,667.91 | 5,192,101.00 | 6,371.87 | -0.22 |
| 1997 | 4021 | 14,113.54 | 15,514.03 | 18,653.99 | 10,221.07 | 16,033.60 | 21,425.95 | -79,903.00 | 16,059.17 | 5,192,101.00 | 7,196.31 | 0.31 |
| 1998 | 4624 | 20,165.22 | 22,166.23 | 26,652.55 | 14,603.72 | 22,908.58 | 23,870.93 | -79,903.00 | 50,464.24 | 5,192,101.00 | 8,095.12 | 0.97 |
| 1999 | 5318 | 28,499.47 | 31,327.49 | 37,667.97 | 20,639.41 | 32,376.65 | 25,545.31 | -79,903.00 | 96,153.30 | 5,192,101.00 | 9,065.45 | 1.85 |
| 2000 | 6116 | 39,279.44 | 43,177.15 | 51,915.91 | 28,446.30 | 44,623.16 | 34,524.36 | -79,903.00 | 162,063.32 | 5,192,101.00 | 10,127.35 | 3.12 |
| 2001 | 7033 | 54,244.66 | 59,627.39 | 71,695.52 | 39,284.16 | 61,624.32 | 44,759.52 | -79,903.00 | 251,332.57 | 5,192,101.00 | 11,230.04 | 4.83 |
| 2002 | 8088 | 75,159.19 | 82,617.27 | 99,338.35 | 54,430.53 | 85,384.14 | 58,454.82 | -79,903.00 | 375,481.30 | 5,192,101.00 | 12,326.76 | 7.21 |
| 2003 | 9301 | 109,687.55 | 120,571.90 | 144,974.63 | 79,436.08 | 124,609.87 | 70,826.36 | -79,903.00 | 570,203.40 | 5,192,101.00 | 13,095.26 | 10.95 |
| 2004 | 10696 | 163,206.79 | 179,401.87 | 215,711.23 | 118,194.89 | 185,410.07 | 85,815.85 | -79,903.00 | 867,837.69 | 5,192,101.00 | 13,329.54 | 16.67 |
| 2005 | 12301 | 244,481.65 | 268,741.68 | 323,132.54 | 177,054.41 | 277,741.88 | 98,245.61 | -79,903.00 | 1,309,494.76 | 5,192,101.00 | 12,670.31 | 25.16 |
| 2006 | 14146 | 336,895.38 | 370,325.67 | 445,276.11 | 243,980.74 | 382,727.94 | 110,734.43 | -79,903.00 | 1,810,037.26 | 5,192,101.00 | 11,979.21 | 34.78 |
| 2007 | 16268 | 464,079.89 | 510,130.75 | 613,376.30 | 336,088.17 | 527,215.12 | 124,371.59 | -79,903.00 | 2,495,358.82 | 5,192,101.00 | 10,209.21 | 47.97 |
| 2008 | 18708 | 653,069.32 | 717,873.70 | 863,164.27 | 472,954.94 | 741,915.41 | 139,095.53 | -79,903.00 | 3,508,170.16 | 5,192,101.00 | 6,164.93 | 67.49 |
| 2009 | 21514 | 944,892.43 | 1,038,654.55 | 1,248,867.81 | 684,294.18 | 1,073,439.26 | 154,760.06 | -79,903.00 | 5,065,005.30 | 5,192,101.00 | (2,000.04) | 97.59 |
| 2010 | 24741 | 1,420,644.61 | 1,561,615.85 | 1,877,670.99 | 1,028,835.47 | 1,613,914.62 | 171,097.33 | -79,903.00 | 7,593,875.88 | 5,192,101.00 | (18,023.67) | 146.77 |