

## BAB V

### KESIMPULAN DAN SARAN

#### 5.1. Kesimpulan

Berdasarkan analisis yang telah dilakukan terhadap kelayakan jalan Lingkar Luar Kota Sungai Penuh ditinjau dari aspek teknis dan aspek ekonomi, dapat ditarik kesimpulan sebagai berikut :

1. Dari aspek teknis rencana pembangunan jalan lingkar luar dikatakan layak untuk dibangun apabila dilakukan pembebasan lahan agar mencapai lebar 15 meter yang dipersyaratkan, namun apabila tidak dilakukan pembebasan lahan maka jalan lingkar luar tidak layak untuk dibangun. Tingkat pelayanan jalan existing masih dapat menampung beban lalu lintas sampai tahun 2029 yaitu dengan kondisi jalan masih baik dan tingkat pelayanan C (Arus stabil, kecepatan dikontrol oleh lalu lintas, volume pelayanan yang dipakai untuk jalan perkotaan), dengan nilai perbandingan volume lalu lintas dengan kapasitas jalan atau DS pada tahun 2029 adalah 0,8383, dan nilai DS pada akhir umur rencana sebesar 1,1932. Berdasarkan Permen PU Nomor 19/PRT/M/2011 pasal 11 ayat 1 a bahwasannya jalan kolektor memiliki derajat kejenuhan (DS) paling tinggi 0,85, sementara jalan existing sampai tahun 2029 didapat 0,8383 berarti jalan tersebut layak dibangun.
2. Dari aspek ekonomi analisis terhadap parameter-parameter kelayakan ekonomi pembangunan jalan lingkar luar terhadap investasi awal dan investasi jangka panjang memiliki keuntungan, diantara : nilai NPV (*Net*

*Present Value*) atau nilai bersih sekarang sampai umur rencana tahun 2038 didapat sebesar Rp. 3.265.267.735.860,67, yang artinya proyek jalan lingkar luar layak untuk dibangun karena besar dari 0. Nilai BCR (*Benefit Cost Ratio*) atau rasio manfaat biaya didapat 9,82, artinya proyek jalan lingkar luar layak untuk dilaksanakan karena memiliki BCR yang lebih besar dari 1. Nilai EIRR (*Economic Internal Rate of Return*) atau tingkat pengembalian bunga ekonomi didapat 41,81%, artinya proyek pembangunan jalan lingkar luar layak dilaksanakan karena memiliki EIRR lebih besar dari tingkat suku bunga bank yaitu 8%.

3. Dari segi penghematan waktu tempuh pembangunan jalan lingkar luar memiliki waktu tempuh yang lebih efektif dibanding dilakukannya peningkatan jalan existing yaitu sebesar 9,6 menit.

## **5.2. Saran**

Dari hasil penelitian dan kesimpulan yang didapatkan, maka penulis dapat memberikan saran sebagai berikut :

1. Pembangunan jalan lingkar luar sebaiknya dilaksanakan, walau dari segi kelayakan tingkat pelayanan jalan belum dibutuhkan, namun kecepatan maksimal hanya bisa 30 km/jam, karena banyaknya hambatan samping yaitu parkir kendaraan yang berada disebalah kiri jalan.
2. Dari segi kelayakan ekonomi pembangunan jalan lingkar luar sangat menguntungkan bagi pengendara kendaraan dalam jangka panjang dan mempersingkat waktu perjalanan.

3. Untuk pembangunan jalan lingkaran luar perlu dilakukan kajian dan penelitian tersendiri untuk mengetahui manfaat tidak langsung bagi masyarakat sekitarnya.

# LAMPIRAN

Lampiran 1

**Prediksi Lalu Lintas Harian Rata-rata (LHR)  
Jalan Lingkar Luar dari Tahun 2018 - 2038**

Pertumbuhan Lalu lintas = 4%

| <b>Tahun</b> | <b>Sepeda Motor<br/>SM</b> | <b>Sedan<br/>SD</b> | <b>Utiliti<br/>UT</b> | <b>Bus Kecil<br/>BK</b> | <b>Truk Ringan<br/>TR</b> | <b>Truk Sedang<br/>SD</b> | <b>Truk Berat<br/>TB</b> |
|--------------|----------------------------|---------------------|-----------------------|-------------------------|---------------------------|---------------------------|--------------------------|
| 2018         | 16.948,00                  | 4.538,00            | 0,00                  | 142,00                  | 297,00                    | 21,00                     | 58,00                    |
| 2019         | 17.625,92                  | 4.719,52            | 0,00                  | 147,68                  | 308,88                    | 21,84                     | 60,32                    |
| 2020         | 18.330,96                  | 4.908,30            | 0,00                  | 153,59                  | 321,24                    | 22,71                     | 62,73                    |
| 2021         | 19.064,20                  | 5.104,63            | 0,00                  | 159,73                  | 334,08                    | 23,62                     | 65,24                    |
| 2022         | 19.826,76                  | 5.308,82            | 0,00                  | 166,12                  | 347,45                    | 24,57                     | 67,85                    |
| 2023         | 20.619,83                  | 5.521,17            | 0,00                  | 172,76                  | 361,35                    | 25,55                     | 70,57                    |
| 2024         | 21.444,63                  | 5.742,02            | 0,00                  | 179,68                  | 375,80                    | 26,57                     | 73,39                    |
| 2025         | 22.302,41                  | 5.971,70            | 0,00                  | 186,86                  | 390,83                    | 27,63                     | 76,32                    |
| 2026         | 23.194,51                  | 6.210,57            | 0,00                  | 194,34                  | 406,47                    | 28,74                     | 79,38                    |
| 2027         | 24.122,29                  | 6.458,99            | 0,00                  | 202,11                  | 422,72                    | 29,89                     | 82,55                    |
| 2028         | 25.087,18                  | 6.717,35            | 0,00                  | 210,19                  | 439,63                    | 31,09                     | 85,85                    |
| 2029         | 26.090,67                  | 6.986,04            | 0,00                  | 218,60                  | 457,22                    | 32,33                     | 89,29                    |
| 2030         | 27.134,29                  | 7.265,48            | 0,00                  | 227,35                  | 475,51                    | 33,62                     | 92,86                    |
| 2031         | 28.219,67                  | 7.556,10            | 0,00                  | 236,44                  | 494,53                    | 34,97                     | 96,57                    |
| 2032         | 29.348,45                  | 7.858,35            | 0,00                  | 245,90                  | 514,31                    | 36,37                     | 100,44                   |
| 2033         | 30.522,39                  | 8.172,68            | 0,00                  | 255,73                  | 534,88                    | 37,82                     | 104,45                   |
| 2034         | 31.743,29                  | 8.499,59            | 0,00                  | 265,96                  | 556,28                    | 39,33                     | 108,63                   |
| 2035         | 33.013,02                  | 8.839,57            | 0,00                  | 276,60                  | 578,53                    | 40,91                     | 112,98                   |
| 2036         | 34.333,54                  | 9.193,16            | 0,00                  | 287,67                  | 601,67                    | 42,54                     | 117,50                   |
| 2037         | 35.706,88                  | 9.560,88            | 0,00                  | 299,17                  | 625,73                    | 44,24                     | 122,20                   |
| 2038         | 37.135,16                  | 9.943,32            | 0,00                  | 311,14                  | 650,76                    | 46,01                     | 127,09                   |

Lampiran 2

**Prediksi Lalu Lintas Harian Rata-rata (LHRT)  
Jalan Lingkar Luar dari Tahun 2018 - 2038**

Pertumbuhan Lalu lintas = 4%

| Tahun | Sepeda Motor<br>SM | Sedan<br>SD  | Utiliti<br>UT | Bus Kecil<br>BK | Truk Ringan<br>TR | Truk Sedang<br>SD | Truk Berat<br>TB |
|-------|--------------------|--------------|---------------|-----------------|-------------------|-------------------|------------------|
| 2018  | 6.186.020,00       | 1.656.370,00 | 0,00          | 51.830,00       | 108.405,00        | 7.665,00          | 21.170,00        |
| 2019  | 6.433.460,80       | 1.722.624,80 | 0,00          | 53.903,20       | 112.741,20        | 7.971,60          | 22.016,80        |
| 2020  | 6.690.799,23       | 1.791.529,79 | 0,00          | 56.059,33       | 117.250,85        | 8.290,46          | 22.897,47        |
| 2021  | 6.958.431,20       | 1.863.190,98 | 0,00          | 58.301,70       | 121.940,88        | 8.622,08          | 23.813,37        |
| 2022  | 7.236.768,45       | 1.937.718,62 | 0,00          | 60.633,77       | 126.818,52        | 8.966,97          | 24.765,91        |
| 2023  | 7.526.239,19       | 2.015.227,37 | 0,00          | 63.059,12       | 131.891,26        | 9.325,64          | 25.756,54        |
| 2024  | 7.827.288,75       | 2.095.836,46 | 0,00          | 65.581,48       | 137.166,91        | 9.698,67          | 26.786,80        |
| 2025  | 8.140.380,30       | 2.179.669,92 | 0,00          | 68.204,74       | 142.653,58        | 10.086,62         | 27.858,28        |
| 2026  | 8.465.995,52       | 2.266.856,72 | 0,00          | 70.932,93       | 148.359,73        | 10.490,08         | 28.972,61        |
| 2027  | 8.804.635,34       | 2.357.530,99 | 0,00          | 73.770,25       | 154.294,12        | 10.909,69         | 30.131,51        |
| 2028  | 9.156.820,75       | 2.451.832,23 | 0,00          | 76.721,06       | 160.465,88        | 11.346,07         | 31.336,77        |
| 2029  | 9.523.093,58       | 2.549.905,52 | 0,00          | 79.789,90       | 166.884,52        | 11.799,92         | 32.590,24        |
| 2030  | 9.904.017,32       | 2.651.901,74 | 0,00          | 82.981,50       | 173.559,90        | 12.271,91         | 33.893,85        |
| 2031  | 10.300.178,02      | 2.757.977,81 | 0,00          | 86.300,76       | 180.502,29        | 12.762,79         | 35.249,61        |
| 2032  | 10.712.185,14      | 2.868.296,92 | 0,00          | 89.752,79       | 187.722,39        | 13.273,30         | 36.659,59        |
| 2033  | 11.140.672,54      | 2.983.028,79 | 0,00          | 93.342,90       | 195.231,28        | 13.804,23         | 38.125,97        |
| 2034  | 11.586.299,45      | 3.102.349,95 | 0,00          | 97.076,62       | 203.040,53        | 14.356,40         | 39.651,01        |
| 2035  | 12.049.751,42      | 3.226.443,94 | 0,00          | 100.959,68      | 211.162,15        | 14.930,66         | 41.237,05        |
| 2036  | 12.531.741,48      | 3.355.501,70 | 0,00          | 104.998,07      | 219.608,64        | 15.527,88         | 42.886,54        |
| 2037  | 13.033.011,14      | 3.489.721,77 | 0,00          | 109.197,99      | 228.392,98        | 16.149,00         | 44.602,00        |
| 2038  | 13.554.331,59      | 3.629.310,64 | 0,00          | 113.565,91      | 237.528,70        | 16.794,96         | 46.386,08        |

**Manfaat Ekonomi Jalan Lingkar Luar  
Tahun 2018 - 2038**

Inflasi = 6%

| Tahun | Sepeda Motor   |            |                     | Sedan         |             |                     |
|-------|----------------|------------|---------------------|---------------|-------------|---------------------|
|       | LHRT           | Manfaat    | Jumlah Manfaat      | LHRT          | Manfaat     | Jumlah Manfaat      |
| 2018  | 6.186.020,000  | 6.870,093  | 42.498.530.311,637  | 1.656.370,000 | 40.511,186  | 67.101.513.231,924  |
| 2019  | 6.557.181,200  | 7.282,298  | 47.751.348.658,155  | 1.755.752,200 | 42.941,857  | 75.395.260.267,390  |
| 2020  | 6.950.612,072  | 7.719,236  | 53.653.415.352,303  | 1.861.097,332 | 45.518,369  | 84.714.114.436,439  |
| 2021  | 7.367.648,796  | 8.182,390  | 60.284.977.489,848  | 1.972.763,172 | 48.249,471  | 95.184.778.980,783  |
| 2022  | 7.809.707,724  | 8.673,334  | 67.736.200.707,593  | 2.091.128,962 | 51.144,439  | 106.949.617.662,808 |
| 2023  | 8.278.290,188  | 9.193,734  | 76.108.395.115,052  | 2.216.596,700 | 54.213,105  | 120.168.590.405,931 |
| 2024  | 8.774.987,599  | 9.745,358  | 85.515.392.751,272  | 2.349.592,502 | 57.465,892  | 135.021.428.180,104 |
| 2025  | 9.301.486,855  | 10.330,079 | 96.085.095.295,330  | 2.490.568,052 | 60.913,845  | 151.710.076.703,164 |
| 2026  | 9.859.576,066  | 10.949,884 | 107.961.213.073,832 | 2.640.002,135 | 64.568,676  | 170.461.442.183,676 |
| 2027  | 10.451.150,630 | 11.606,877 | 121.305.219.009,758 | 2.798.402,263 | 68.442,796  | 191.530.476.437,578 |
| 2028  | 11.078.219,668 | 12.303,290 | 136.298.544.079,364 | 2.966.306,399 | 72.549,364  | 215.203.643.325,262 |
| 2029  | 11.742.912,848 | 13.041,487 | 153.145.044.127,573 | 3.144.284,783 | 76.902,326  | 241.802.813.640,265 |
| 2030  | 12.447.487,619 | 13.823,976 | 172.073.771.581,741 | 3.332.941,870 | 81.516,466  | 271.689.641.406,202 |
| 2031  | 13.194.336,876 | 14.653,415 | 193.342.089.749,245 | 3.532.918,382 | 86.407,454  | 305.270.481.084,008 |
| 2032  | 13.985.997,088 | 15.532,620 | 217.239.172.042,251 | 3.744.893,485 | 91.591,901  | 343.001.912.545,991 |
| 2033  | 14.825.156,914 | 16.464,577 | 244.089.933.706,674 | 3.969.587,094 | 97.087,415  | 385.396.948.936,676 |
| 2034  | 15.714.666,328 | 17.452,451 | 274.259.449.512,818 | 4.207.762,320 | 102.912,660 | 433.032.011.825,249 |
| 2035  | 16.657.546,308 | 18.499,598 | 308.157.917.472,603 | 4.460.228,059 | 109.087,419 | 486.554.768.486,850 |
| 2036  | 17.656.999,087 | 19.609,574 | 346.246.236.072,217 | 4.727.841,743 | 115.632,664 | 546.692.937.871,824 |
| 2037  | 18.716.419,032 | 20.786,149 | 389.042.270.850,742 | 5.011.512,247 | 122.570,624 | 614.264.184.992,782 |
| 2038  | 19.839.404,174 | 22.033,318 | 437.127.895.527,894 | 5.312.202,982 | 129.924,862 | 690.187.238.257,890 |

Lampiran 3

**Manfaat Ekonomi Jalan Lingkar Luar  
dari Tahun 2018 - 2038**

Inflasi = 6%

| Tahun | Utiliti |             |                | Bus Kecil   |             |                    |
|-------|---------|-------------|----------------|-------------|-------------|--------------------|
|       | LHRT    | Manfaat     | Jumlah Manfaat | LHRT        | Manfaat     | Jumlah Manfaat     |
| 2018  | 0,000   | 40.062,985  | 0,000          | 51.830,000  | 61.774,394  | 3.201.766.827,229  |
| 2019  | 0,000   | 42.466,764  | 0,000          | 54.939,800  | 65.480,857  | 3.597.505.207,075  |
| 2020  | 0,000   | 45.014,770  | 0,000          | 58.236,188  | 69.409,709  | 4.042.156.850,669  |
| 2021  | 0,000   | 47.715,657  | 0,000          | 61.730,359  | 73.574,291  | 4.541.767.437,412  |
| 2022  | 0,000   | 50.578,596  | 0,000          | 65.434,181  | 77.988,749  | 5.103.129.892,676  |
| 2023  | 0,000   | 53.613,312  | 0,000          | 69.360,232  | 82.668,074  | 5.733.876.747,411  |
| 2024  | 0,000   | 56.830,110  | 0,000          | 73.521,846  | 87.628,158  | 6.442.583.913,391  |
| 2025  | 0,000   | 60.239,917  | 0,000          | 77.933,156  | 92.885,848  | 7.238.887.285,086  |
| 2026  | 0,000   | 63.854,312  | 0,000          | 82.609,146  | 98.458,999  | 8.133.613.753,522  |
| 2027  | 0,000   | 67.685,571  | 0,000          | 87.565,694  | 104.366,538 | 9.138.928.413,458  |
| 2028  | 0,000   | 71.746,705  | 0,000          | 92.819,636  | 110.628,531 | 10.268.499.965,361 |
| 2029  | 0,000   | 76.051,507  | 0,000          | 98.388,814  | 117.266,243 | 11.537.686.561,080 |
| 2030  | 0,000   | 80.614,598  | 0,000          | 104.292,143 | 124.302,217 | 12.963.744.620,029 |
| 2031  | 0,000   | 85.451,474  | 0,000          | 110.549,672 | 131.760,350 | 14.566.063.455,065 |
| 2032  | 0,000   | 90.578,562  | 0,000          | 117.182,652 | 139.665,971 | 16.366.428.898,111 |
| 2033  | 0,000   | 96.013,276  | 0,000          | 124.213,611 | 148.045,929 | 18.389.319.509,917 |
| 2034  | 0,000   | 101.774,072 | 0,000          | 131.666,428 | 156.928,685 | 20.662.239.401,343 |
| 2035  | 0,000   | 107.880,517 | 0,000          | 139.566,413 | 166.344,406 | 23.216.092.191,349 |
| 2036  | 0,000   | 114.353,348 | 0,000          | 147.940,398 | 176.325,071 | 26.085.601.186,199 |
| 2037  | 0,000   | 121.214,549 | 0,000          | 156.816,822 | 186.904,575 | 29.309.781.492,814 |
| 2038  | 0,000   | 128.487,421 | 0,000          | 166.225,832 | 198.118,849 | 32.932.470.485,325 |

Lampiran 3

**Manfaat Ekonomi Jalan Lingkar Luar  
dari Tahun 2018 - 2038**

Inflasi = 6%

| Tahun | Truk Ringan |             |                    | Truk Sedang |             |                   |
|-------|-------------|-------------|--------------------|-------------|-------------|-------------------|
|       | LHRT        | Manfaat     | Jumlah Manfaat     | LHRT        | Manfaat     | Jumlah Manfaat    |
| 2018  | 108.405,000 | 45.420,367  | 4.923.794.898,780  | 7.665,000   | 67.694,257  | 518.876.478,757   |
| 2019  | 114.909,300 | 48.145,589  | 5.532.375.948,269  | 8.124,900   | 71.755,912  | 583.009.611,531   |
| 2020  | 121.803,858 | 51.034,325  | 6.216.177.615,475  | 8.612,394   | 76.061,267  | 655.069.599,516   |
| 2021  | 129.112,089 | 54.096,384  | 6.984.497.168,748  | 9.129,138   | 80.624,943  | 736.036.202,017   |
| 2022  | 136.858,815 | 57.342,167  | 7.847.781.018,806  | 9.676,886   | 85.462,440  | 827.010.276,586   |
| 2023  | 145.070,344 | 60.782,697  | 8.817.766.752,730  | 10.257,499  | 90.590,186  | 929.228.746,772   |
| 2024  | 153.774,564 | 64.429,659  | 9.907.642.723,367  | 10.872,949  | 96.025,597  | 1.044.081.419,873 |
| 2025  | 163.001,038 | 68.295,438  | 11.132.227.363,976 | 11.525,326  | 101.787,133 | 1.173.129.883,369 |
| 2026  | 172.781,101 | 72.393,165  | 12.508.170.666,163 | 12.216,845  | 107.894,361 | 1.318.128.736,953 |
| 2027  | 183.147,967 | 76.736,755  | 14.054.180.560,501 | 12.949,856  | 114.368,023 | 1.481.049.448,841 |
| 2028  | 194.136,845 | 81.340,960  | 15.791.277.277,779 | 13.726,848  | 121.230,104 | 1.664.107.160,718 |
| 2029  | 205.785,055 | 86.221,417  | 17.743.079.149,312 | 14.550,458  | 128.503,910 | 1.869.790.805,782 |
| 2030  | 218.132,159 | 91.394,702  | 19.936.123.732,167 | 15.423,486  | 136.214,145 | 2.100.896.949,377 |
| 2031  | 231.220,088 | 96.878,385  | 22.400.228.625,463 | 16.348,895  | 144.386,993 | 2.360.567.812,320 |
| 2032  | 245.093,293 | 102.691,088 | 25.168.896.883,570 | 17.329,829  | 153.050,213 | 2.652.333.993,923 |
| 2033  | 259.798,891 | 108.852,553 | 28.279.772.538,379 | 18.369,619  | 162.233,226 | 2.980.162.475,572 |
| 2034  | 275.386,824 | 115.383,706 | 31.775.152.424,123 | 19.471,796  | 171.967,219 | 3.348.510.557,552 |
| 2035  | 291.910,034 | 122.306,729 | 35.702.561.263,744 | 20.640,103  | 182.285,253 | 3.762.386.462,466 |
| 2036  | 309.424,636 | 129.645,132 | 40.115.397.835,943 | 21.878,510  | 193.222,368 | 4.227.417.429,227 |
| 2037  | 327.990,114 | 137.423,840 | 45.073.661.008,466 | 23.191,220  | 204.815,710 | 4.749.926.223,479 |
| 2038  | 347.669,521 | 145.669,271 | 50.644.765.509,112 | 24.582,693  | 217.104,652 | 5.337.017.104,701 |

Lampiran 3

**Manfaat Ekonomi Jalan Lingkar Luar  
dari Tahun 2018 - 2038**

Inflasi = 6%

| Tahun | Truk Berat |             |                    |
|-------|------------|-------------|--------------------|
|       | LHRT       | Manfaat     | Jumlah Manfaat     |
| 2018  | 21.170,000 | 127.528,833 | 2.699.785.401,738  |
| 2019  | 22.440,200 | 135.180,563 | 3.033.478.877,393  |
| 2020  | 23.786,612 | 143.291,397 | 3.408.416.866,638  |
| 2021  | 25.213,809 | 151.888,881 | 3.829.697.191,355  |
| 2022  | 26.726,637 | 161.002,214 | 4.303.047.764,206  |
| 2023  | 28.330,235 | 170.662,347 | 4.834.904.467,862  |
| 2024  | 30.030,050 | 180.902,087 | 5.432.498.660,090  |
| 2025  | 31.831,853 | 191.756,213 | 6.103.955.494,477  |
| 2026  | 33.741,764 | 203.261,585 | 6.858.404.393,594  |
| 2027  | 35.766,270 | 215.457,281 | 7.706.103.176,643  |
| 2028  | 37.912,246 | 228.384,717 | 8.658.577.529,276  |
| 2029  | 40.186,980 | 242.087,800 | 9.728.777.711,894  |
| 2030  | 42.598,199 | 256.613,068 | 10.931.254.637,084 |
| 2031  | 45.154,091 | 272.009,853 | 12.282.357.710,228 |
| 2032  | 47.863,337 | 288.330,444 | 13.800.457.123,212 |
| 2033  | 50.735,137 | 305.630,270 | 15.506.193.623,641 |
| 2034  | 53.779,245 | 323.968,087 | 17.422.759.155,523 |
| 2035  | 57.006,000 | 343.406,172 | 19.576.212.187,146 |
| 2036  | 60.426,360 | 364.010,542 | 21.995.832.013,477 |
| 2037  | 64.051,941 | 385.851,175 | 24.714.516.850,342 |
| 2038  | 67.895,058 | 409.002,245 | 27.769.231.133,045 |

**Jumlah Total Manfaat Ekonomi Jalan Lingkar Luar**

| <b>Tahun</b> | <b>Sepeda Motor<br/>SM</b> | <b>Sedan<br/>SD</b> | <b>Utiliti<br/>UT</b> | <b>Bus Kecil<br/>BK</b> | <b>Truk Ringan<br/>TR</b> | <b>Truk Sedang<br/>SD</b> | <b>Truk Berat<br/>TB</b> | <b>Jumlah Manfaat<br/>Total</b> |
|--------------|----------------------------|---------------------|-----------------------|-------------------------|---------------------------|---------------------------|--------------------------|---------------------------------|
| 2018         | 42.498.530.311,637         | 67.101.513.231,924  | 0,000                 | 3.201.766.827,229       | 4.923.794.898,780         | 518.876.478,757           | 2.699.785.401,738        | 120.944.267.150,065             |
| 2019         | 47.751.348.658,155         | 75.395.260.267,390  | 0,000                 | 3.597.505.207,075       | 5.532.375.948,269         | 583.009.611,531           | 3.033.478.877,393        | 135.892.978.569,813             |
| 2020         | 53.653.415.352,303         | 84.714.114.436,439  | 0,000                 | 4.042.156.850,669       | 6.216.177.615,475         | 655.069.599,516           | 3.408.416.866,638        | 152.689.350.721,041             |
| 2021         | 60.284.977.489,848         | 95.184.778.980,783  | 0,000                 | 4.541.767.437,412       | 6.984.497.168,748         | 736.036.202,017           | 3.829.697.191,355        | 171.561.754.470,162             |
| 2022         | 67.736.200.707,593         | 106.949.617.662,808 | 0,000                 | 5.103.129.892,676       | 7.847.781.018,806         | 827.010.276,586           | 4.303.047.764,206        | 192.766.787.322,674             |
| 2023         | 76.108.395.115,052         | 120.168.590.405,931 | 0,000                 | 5.733.876.747,411       | 8.817.766.752,730         | 929.228.746,772           | 4.834.904.467,862        | 216.592.762.235,757             |
| 2024         | 85.515.392.751,272         | 135.021.428.180,104 | 0,000                 | 6.442.583.913,391       | 9.907.642.723,367         | 1.044.081.419,873         | 5.432.498.660,090        | 243.363.627.648,096             |
| 2025         | 96.085.095.295,330         | 151.710.076.703,164 | 0,000                 | 7.238.887.285,086       | 11.132.227.363,976        | 1.173.129.883,369         | 6.103.955.494,477        | 273.443.372.025,401             |
| 2026         | 107.961.213.073,832        | 170.461.442.183,676 | 0,000                 | 8.133.613.753,522       | 12.508.170.666,163        | 1.318.128.736,953         | 6.858.404.393,594        | 307.240.972.807,741             |
| 2027         | 121.305.219.009,758        | 191.530.476.437,578 | 0,000                 | 9.138.928.413,458       | 14.054.180.560,501        | 1.481.049.448,841         | 7.706.103.176,643        | 345.215.957.046,777             |
| 2028         | 136.298.544.079,364        | 215.203.643.325,262 | 0,000                 | 10.268.499.965,361      | 15.791.277.277,779        | 1.664.107.160,718         | 8.658.577.529,276        | 387.884.649.337,759             |
| 2029         | 153.145.044.127,573        | 241.802.813.640,265 | 0,000                 | 11.537.686.561,080      | 17.743.079.149,312        | 1.869.790.805,782         | 9.728.777.711,894        | 435.827.191.995,906             |
| 2030         | 172.073.771.581,741        | 271.689.641.406,202 | 0,000                 | 12.963.744.620,029      | 19.936.123.732,167        | 2.100.896.949,377         | 10.931.254.637,084       | 489.695.432.926,600             |
| 2031         | 193.342.089.749,245        | 305.270.481.084,008 | 0,000                 | 14.566.063.455,065      | 22.400.228.625,463        | 2.360.567.812,320         | 12.282.357.710,228       | 550.221.788.436,328             |
| 2032         | 217.239.172.042,251        | 343.001.912.545,991 | 0,000                 | 16.366.428.898,111      | 25.168.896.883,570        | 2.652.333.993,923         | 13.800.457.123,212       | 618.229.201.487,058             |
| 2033         | 244.089.933.706,674        | 385.396.948.936,676 | 0,000                 | 18.389.319.509,917      | 28.279.772.538,379        | 2.980.162.475,572         | 15.506.193.623,641       | 694.642.330.790,858             |
| 2034         | 274.259.449.512,818        | 433.032.011.825,249 | 0,000                 | 20.662.239.401,343      | 31.775.152.424,123        | 3.348.510.557,552         | 17.422.759.155,523       | 780.500.122.876,608             |
| 2035         | 308.157.917.472,603        | 486.554.768.486,850 | 0,000                 | 23.216.092.191,349      | 35.702.561.263,744        | 3.762.386.462,466         | 19.576.212.187,146       | 876.969.938.064,157             |
| 2036         | 346.246.236.072,217        | 546.692.937.871,824 | 0,000                 | 26.085.601.186,199      | 40.115.397.835,943        | 4.227.417.429,227         | 21.995.832.013,477       | 985.363.422.408,887             |
| 2037         | 389.042.270.850,742        | 614.264.184.992,782 | 0,000                 | 29.309.781.492,814      | 45.073.661.008,466        | 4.749.926.223,479         | 24.714.516.850,342       | 1.107.154.341.418,620           |
| 2038         | 437.127.895.527,894        | 690.187.238.257,890 | 0,000                 | 32.932.470.485,325      | 50.644.765.509,112        | 5.337.017.104,701         | 27.769.231.133,045       | 1.243.998.618.017,970           |

### Kelayakan Ekonomi Pembangunan Jalan Lingkar Luar

Suku Bunga = 8%

Inflasi = 6%

| Tahun | Tahun | Cash Flow          |                      | Net Benefit                 | PV                          |                             |
|-------|-------|--------------------|----------------------|-----------------------------|-----------------------------|-----------------------------|
|       |       | Cost               | Benefit              |                             | Cost                        | Benefit                     |
| 0     | 2018  | 339.707.479.250,00 |                      | 0,00                        | 0,00                        |                             |
| 1     | 2019  | 360.089.928.005,00 |                      | -360.089.928.005,00         | 360.089.928.005,00          |                             |
| 2     | 2020  | 760.709.215,36     | 152.689.350.721,04   | 151.928.641.505,68          | 652.185.541,29              | 130.906.507.819,82          |
| 3     | 2021  | 806.351.768,28     | 171.561.754.470,16   | 170.755.402.701,88          | 640.108.031,27              | 136.191.252.024,40          |
| 4     | 2022  | 854.732.874,38     | 192.766.787.322,67   | 191.912.054.448,29          | 628.254.178,84              | 141.689.343.309,83          |
| 5     | 2023  | 1.349.289.334,17   | 216.592.762.235,76   | 215.243.472.901,59          | 918.303.648,77              | 147.409.394.576,78          |
| 6     | 2024  | 906.016.846,84     | 243.363.627.648,10   | 242.457.610.801,25          | 570.944.298,33              | 153.360.366.431,92          |
| 7     | 2025  | 960.377.857,65     | 273.443.372.025,40   | 272.482.994.167,75          | 560.371.255,76              | 159.551.581.224,91          |
| 8     | 2026  | 1.018.000.529,11   | 307.240.972.807,74   | 306.222.972.278,63          | 549.994.010,29              | 165.992.737.652,14          |
| 9     | 2027  | 1.079.080.560,86   | 345.215.957.046,78   | 344.136.876.485,92          | 539.808.936,02              | 172.693.925.949,95          |
| 10    | 2028  | 1.143.825.394,51   | 387.884.649.337,76   | 386.740.823.943,25          | 529.812.474,24              | 179.665.643.701,26          |
| 11    | 2029  | 1.430.246.694,22   | 435.827.191.995,91   | 434.396.945.301,69          | 613.408.291,77              | 186.918.812.280,31          |
| 12    | 2030  | 1.212.454.918,18   | 489.695.432.926,60   | 488.482.978.008,42          | 481.482.529,75              | 194.464.793.961,26          |
| 13    | 2031  | 1.285.202.213,27   | 550.221.788.436,33   | 548.936.586.223,06          | 472.566.186,60              | 202.315.409.717,47          |
| 14    | 2032  | 1.362.314.346,07   | 618.229.201.487,06   | 616.866.887.140,99          | 463.814.960,93              | 210.482.957.739,40          |
| 15    | 2033  | 1.444.053.206,83   | 694.642.330.790,86   | 693.198.277.584,03          | 455.225.794,98              | 218.980.232.699,99          |
| 16    | 2034  | 1.530.696.399,24   | 780.500.122.876,61   | 778.969.426.477,37          | 446.795.687,67              | 227.820.545.797,88          |
| 17    | 2035  | 1.516.061.495,87   | 876.969.938.064,16   | 875.453.876.568,29          | 409.744.350,82              | 237.017.745.609,72          |
| 18    | 2036  | 1.622.538.183,20   | 985.363.422.408,89   | 983.740.884.225,69          | 406.038.605,05              | 246.586.239.784,33          |
| 19    | 2037  | 1.719.890.474,19   | 1.107.154.341.418,62 | 1.105.434.450.944,43        | 398.519.371,62              | 256.541.017.612,66          |
| 20    | 2038  | 1.823.083.902,64   | 1.243.998.618.017,97 | 1.242.175.534.115,33        | 391.139.383,26              | 266.897.673.508,88          |
|       |       | <b>Σ</b>           |                      | <b>9.689.446.767.818,51</b> | <b>370.218.445.542,26</b>   | <b>3.635.486.181.402,92</b> |
|       |       | <b>NPV</b>         |                      |                             | <b>3.265.267.735.860,67</b> | <b>Investasi Layak</b>      |
|       |       | <b>BCR</b>         |                      |                             | <b>9,82</b>                 | <b>Investasi Layak</b>      |
|       |       | <b>EIRR (%)</b>    |                      |                             | <b>41,81%</b>               | <b>Investasi Layak</b>      |

Lampiran 6

### Kelayakan Ekonomi Pembangunan Jalan Lingkar Luar

Suku Bunga = 8%

Inflasi = 6%

| Tahun           | Tahun | Cash Flow          |                    | Net Benefit               | PV                        |                           |
|-----------------|-------|--------------------|--------------------|---------------------------|---------------------------|---------------------------|
|                 |       | Cost               | Benefit            |                           | Cost                      | Benefit                   |
| 0               | 2018  | 339.707.479.250,00 |                    | 0,00                      | 0,00                      |                           |
| 1               | 2019  | 360.089.928.005,00 |                    | -360.089.928.005,00       | 360.089.928.005,00        |                           |
| 2               | 2020  | 760.709.215,36     | 152.689.350.721,04 | 151.928.641.505,68        | 652.185.541,29            | 130.906.507.819,82        |
| 3               | 2021  | 806.351.768,28     | 171.561.754.470,16 | 170.755.402.701,88        | 640.108.031,27            | 136.191.252.024,40        |
| 4               | 2022  | 854.732.874,38     | 192.766.787.322,67 | 191.912.054.448,29        | 628.254.178,84            | 141.689.343.309,83        |
| <b>Σ</b>        |       |                    |                    | <b>154.506.170.650,85</b> | <b>362.010.475.756,39</b> | <b>408.787.103.154,05</b> |
| <b>NPV</b>      |       |                    |                    |                           | <b>46.776.627.397,66</b>  | <b>Investasi Layak</b>    |
| <b>BCR</b>      |       |                    |                    |                           | <b>1,13</b>               | <b>Investasi Layak</b>    |
| <b>EIRR (%)</b> |       |                    |                    |                           | <b>12,47%</b>             | <b>Investasi Layak</b>    |

Lampiran 7

| RENCANA ANGGARAN BIAYA (RAB)   |  |                                  |                     |                       |                             |
|--|--|----------------------------------|---------------------|-----------------------|-----------------------------|
| Kegiatan   |  | : PEMBANGUNAN JALAN              |                     |                       |                             |
| Pekerjaan  |  | : PEMBANGUNAN JALAN LINGKAR LUAR |                     |                       |                             |
| Lokasi   |  | : KOTA SUNGAI PENUH              |                     |                       |                             |
| Prop./Kab./Kota  |  | : JAMBI / KOTA SUNGAI PENUH      |                     |                       |                             |
| No. Mata Pembayaran  | Uraian   | Satuan                           | Perkiraan Kuantitas | Harga Satuan (Rupiah) | Jumlah Harga-Harga (Rupiah) |
| a  | b  | c                                | d                   | e                     | f = (d x e)                 |
| <b>DIVISI 1. UMUM</b>  |  |                                  |                     |                       |                             |
| 1.2  | Mobilisasi   | LS                               | 1,00                | 333.745.000           | 333.745.000,00              |
| <b>Jumlah Harga Pekerjaan DIVISI 1 (masuk pada Rekapitulasi Perkiraan Harga Pekerjaan)</b> |  |                                  |                     |                       | <b>333.745.000,00</b>       |
| <b>DIVISI 3. PEKERJAAN TANAH</b>   |  |                                  |                     |                       |                             |
| 3.2.(1a)   | Timbunan Biasa dari sumber galian                      | M <sup>3</sup>                   | 48.865,50           | 200.392,72            | 9.792.290.381,43            |
| 3.3.(1)  | Penyiapan Badan Jalan                                  | M <sup>2</sup>                   | 166.516,00          | 5.774,03              | 961.468.362,42              |
| 3.5.(3)  | Geotekstil Stabilisator (Kelas 1)                      | M <sup>2</sup>                   | 97.731,00           | 33.218,43             | 3.246.470.185,65            |
| <b>Jumlah Harga Pekerjaan DIVISI 3 (masuk pada Rekapitulasi Perkiraan Harga Pekerjaan)</b> |  |                                  |                     |                       | <b>14.000.228.929,50</b>    |
| <b>DIVISI 4. PELEBARAN PERKERASAN DAN BAHU JALAN</b>                                       |  |                                  |                     |                       |                             |
| 4.2.(14)   | Perkerasan Beton Semen                                 | M <sup>3</sup>                   | 8.687,20            | 2.344.172,53          | 20.364.295.634,54           |
| <b>Jumlah Harga Pekerjaan DIVISI 4 (masuk pada Rekapitulasi Perkiraan Harga Pekerjaan)</b> |  |                                  |                     |                       | <b>20.364.295.634,54</b>    |
| <b>DIVISI 5. PERKERASAN BERBUTIR</b>   |  |                                  |                     |                       |                             |
| 5.1.(1)  | Lapis Pondasi Agregat Kelas A                          | M <sup>3</sup>                   | 10.317,75           | 759.795,23            | 7.839.377.214,73            |
| 5.1.(2)  | Lapis Pondasi Agregat Kelas B                          | M <sup>3</sup>                   | 29.863,95           | 724.132,26            | 21.625.449.532,99           |
| 3.2.(3b)   | Timbunan Badan Jalan dengan Sirtu                      | M <sup>3</sup>                   | 20.635,50           | 458.842,49            | 9.468.444.105,14            |
| 5.3.(2)  | Perkerasan Beton Semen dengan Anyaman Tulangan Tunggal | M <sup>3</sup>                   | 22.803,90           | 2.768.318,42          | 63.128.456.430,44           |
| 5.3.(3)  | Lapis Pondasi bawah Beton Kurus                        | M <sup>3</sup>                   | 7.601,30            | 1.648.831,62          | 12.533.263.790,80           |
| <b>Jumlah Harga Pekerjaan DIVISI 5 (masuk pada Rekapitulasi Perkiraan Harga Pekerjaan)</b> |  |                                  |                     |                       | <b>114.594.991.074,11</b>   |
| <b>DIVISI 6. PERKERASAN ASPAL</b>  |  |                                  |                     |                       |                             |
| 6.1 (1)(a)   | Lapis Resap Pengikat - Aspal Cair                      | Liter                            | 123.813,00          | 15.927,71             | 1.972.057.859,56            |
| 6.1 (2)(a)   | Lapis Perekat - Aspal Cair                             | Liter                            | 24.074,75           | 16.113,77             | 387.934.864,94              |
| 6.3(5a)  | Laston Lapis Aus (AC-WC)                               | Ton                              | 11.390,80           | 1.658.461,36          | 18.891.195.068,41           |
| 6.3(6a)  | Laston Lapis Antara (AC-BC)                            | Ton                              | 9.492,33            | 1.618.094,14          | 15.359.483.577,52           |
| <b>Jumlah Harga Pekerjaan DIVISI 6 (masuk pada Rekapitulasi Perkiraan Harga Pekerjaan)</b> |  |                                  |                     |                       | <b>36.610.671.370,42</b>    |
| <b>DIVISI 8. PENGEMBALIAN KONDISI DAN PEKERJAAN MINOR</b>                                  |  |                                  |                     |                       |                             |
| 8.4.(1)  | Marka Jalan Termoplastik                               | M <sup>2</sup>                   | 16.155,30           | 205.256,04            | 3.315.972.831,91            |
| <b>Jumlah Harga Pekerjaan DIVISI 8 (masuk pada Rekapitulasi Perkiraan Harga Pekerjaan)</b> |  |                                  |                     |                       | <b>3.315.972.831,91</b>     |
| <b>(A) Jumlah Harga Pekerjaan ( termasuk Biaya Umum dan Keuntungan )</b>                   |  |                                  |                     |                       | <b>189.219.904.840,47</b>   |
| <b>(B) Pajak Pertambahan Nilai ( PPN ) = 10% x (A)</b>                                     |  |                                  |                     |                       | <b>18.921.990.484,05</b>    |
| <b>(C) JUMLAH TOTAL HARGA PEKERJAAN = (A) + (B)</b>  |  |                                  |                     |                       | <b>208.141.895.324,52</b>   |
| <b>(D) PEMBULATAN</b>  |  |                                  |                     |                       | <b>208.141.895.000,00</b>   |