

**Version: 3.0**

**Confidencial**

**APP**

**Comparador Público Privado**

**PROYECTO NO SOLICITADO DE ASOCIACIÓN PÚBLICO**

**PRIVADA-SISTEMA INTEGRAL HÍDRICO SAN QUINTÍN EN ENSENADA**

**Resumen del Modelo**

| <b>Versión</b> | <b>Cambios / Comentarios</b> |
|----------------|------------------------------|
| 1.0            | Elaboración Inicial          |
| 2.0            | Primera revisión             |
| 3.0            | Incluir Hoja de Escenarios   |



## Supuestos Generales de Modelación

### Supuestos generales de Modelación

Selecciona Escenario -->

|                                      | Escenario 1 | 1           |
|--------------------------------------|-------------|-------------|
|                                      | <b>Base</b> | <b>Base</b> |
| Precio Inicial por m3                | \$16.9      | \$16.9      |
| Fecha del Precio                     | 2016        | 2016        |
| Aplica Inflación al Precio           | VERDADERO   | VERDADERO   |
| Costos Variables                     | \$3.8       | \$3.8       |
| Costos Fijos                         | \$24.5      | \$24.5      |
| Incluir Inflación a Costos Variables | VERDADERO   | VERDADERO   |
| Incluir Inflación a Costos Fijos     | VERDADERO   | VERDADERO   |
| Monto de Inversión                   | \$555.0     | \$555.0     |
| Fecha Inicio Inversión               | ene 2016    | ene 2016    |
| Tiempo de Contrato                   | 30          | 30          |
| Caja Inicial                         | \$10.0      | \$10.0      |
| % Obra Adicional                     | 8.0%        | 8.0%        |
| % de la Inversión a Financiar        | 75.0%       | 75.0%       |
| Spread sobre TIIE                    | 6.5%        | 6.5%        |
| IVA sobre Interés                    | --          | --          |
| Comisión por Apertura                | 3.0%        | 3.0%        |
| Inicia Pago                          | 2018        | 2018        |
| Fin Pago                             | 2044        | 2044        |









## Analisis de Sensibilidad para Estimación de Riesgos

Valores en miles de pesos

| Impacta en                    | Retenidos | Transferidos | Mixtos | Total | Sensibilidad |
|-------------------------------|-----------|--------------|--------|-------|--------------|
| Aumenta Costos                | 0         | 10           | 10     | 21    | 10.0%        |
| Disminuye Ingresos            | 6         | --           | 3      | 9     | 5.0%         |
| Aumenta Tiempo                | 2         | 1            | 4      | 6     | 2.5%         |
| Aumenta el Capital de Trabajo | --        | 5            | 1      | 6     | 2.5%         |
| Disminuye Activos             | --        | 2            | --     | 2     | 0.0%         |
| Aumenta Pasivos               | --        | --           | --     | --    | 0.0%         |

| Riesgo de Sobre Costo         | VP             | Retenidos    | Transferidos   | Mixtos         |
|-------------------------------|----------------|--------------|----------------|----------------|
| 0.0%                          | 653,582        | 12,599       | 326,004        | 314,979        |
| 2.5%                          | 621,891        | 11,988       | 310,196        | 299,707        |
| 5.0%                          | 558,509        | 10,766       | 278,581        | 269,161        |
| 7.5%                          | 463,435        | 8,934        | 231,159        | 223,342        |
| 10.0%                         | 336,670        | 6,490        | 167,930        | 162,251        |
| <b>Riesgo por Sobre Costo</b> | <b>316,912</b> | <b>6,109</b> | <b>158,074</b> | <b>152,729</b> |

| Aumenta Tiempo                | VP           | Retenidos    | Transferidos | Mixtos       |
|-------------------------------|--------------|--------------|--------------|--------------|
| 0.0%                          | 653,582      | 162,129      | 126,663      | 364,790      |
| -2.5%                         | 646,194      | 160,296      | 125,231      | 360,667      |
| -5.0%                         | 644,772      | 159,943      | 124,956      | 359,873      |
| -7.5%                         | 636,303      | 157,843      | 123,314      | 355,146      |
| -10.0%                        | 620,602      | 153,948      | 120,272      | 346,383      |
| <b>Riesgo por Sobre Costo</b> | <b>7,388</b> | <b>1,833</b> | <b>1,432</b> | <b>4,124</b> |

| Riesgo Total                  | VP             | Retenidos     | Transferidos   | Mixtos         |
|-------------------------------|----------------|---------------|----------------|----------------|
| Riesgo por Sobre Costo        | 316,912        | 6,109         | 158,074        | 152,729        |
| Riesgo por Ingreso y Dem      | 127,263        | 82,549        | --             | 44,714         |
| Riesgo por Sobre Costo        | 7,388          | 1,833         | 1,432          | 4,124          |
| Riesgo por Ingreso y Dem      | 1,576          | --            | 1,233          | 343            |
| <b>Riesgo por Sobre Costo</b> | <b>453,139</b> | <b>90,491</b> | <b>160,739</b> | <b>201,909</b> |

| Riesgo de Ingreso y Demanda     | VP             | Retenidos     | Transferidos | Mixtos        |
|---------------------------------|----------------|---------------|--------------|---------------|
| 0%                              | 653,582        | 423,945       | --           | 229,637       |
| -2.50%                          | 611,161        | 396,429       | --           | 214,732       |
| -5.0%                           | 526,320        | 341,397       | --           | 184,923       |
| -8%                             | 399,057        | 258,848       | --           | 140,209       |
| -10%                            | 229,373        | 148,783       | --           | 80,591        |
| <b>Riesgo por Ingreso y Dem</b> | <b>127,263</b> | <b>82,549</b> | <b>--</b>    | <b>44,714</b> |

| Aumenta Capital de Trab         | VP           | Retenidos | Transferidos | Mixtos     |
|---------------------------------|--------------|-----------|--------------|------------|
| 0.0%                            | 653,582      | --        | 511,499      | 142,083    |
| 2.5%                            | 652,006      | --        | 510,266      | 141,741    |
| 5.0%                            | 650,431      | --        | 509,033      | 141,398    |
| 7.5%                            | 648,855      | --        | 507,799      | 141,055    |
| 10.0%                           | 647,279      | --        | 506,566      | 140,713    |
| <b>Riesgo por Ingreso y Dem</b> | <b>1,576</b> | <b>--</b> | <b>1,233</b> | <b>343</b> |



**Costo Proyecto Público de Referencia (PPR)**

Valores en Miles de Pesos

|                          |        |
|--------------------------|--------|
| Tarifa Inicial 2015      | 16.15  |
| Crecimiento de Tarifa    | 2.00%  |
| Aplicar Financiamiento   | FALSO  |
| Incremento en Costos Op  | 6.00%  |
| Incremento en Inversión  | 5.00%  |
| Costo por Escasa de Serv | 25.52% |

|                                   | 2016      | 2017      | 2018     | 2019     | 2020     | 2021     | 2022     | 2023     | 2024     | 2025     | 2026     | 2027     | 2028     | 2029     | 2030      | 2031      | 2032      | 2033      | 2034      | 2035      | 2036      | 2037      | 2038      | 2039      | 2040      | 2041      | 2042      | 2043      | 2044      | 2045      |           |           |           |           |           |
|-----------------------------------|-----------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>Flujo Neto del Proyecto</b>    |           |           |          |          |          |          |          |          |          |          |          |          |          |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| Producción (Miles de M3)          | --        | 1,887     | 7,884    | 7,884    | 7,884    | 7,884    | 7,884    | 7,884    | 7,884    | 7,884    | 7,884    | 7,884    | 7,884    | 7,884    | 7,884     | 7,884     | 7,884     | 7,884     | 7,884     | 7,884     | 7,884     | 7,884     | 7,884     | 7,884     | 7,884     | 7,884     | 7,884     | 7,884     | 7,884     | 7,884     | 7,884     | 7,884     | 7,884     |           |           |
| Tarifa                            | 16.15     | 17.12     | 18.14    | 19.14    | 20.15    | 21.15    | 22.16    | 23.18    | 24.19    | 25.20    | 26.22    | 27.24    | 28.26    | 29.28    | 30.30     | 31.32     | 32.34     | 33.36     | 34.38     | 35.40     | 36.42     | 37.44     | 38.46     | 39.48     | 40.50     | 41.52     | 42.54     | 43.56     | 44.58     | 45.60     | 46.62     | 47.64     | 48.66     | 49.68     |           |
| Total de Ingresos                 | --        | 34,018    | 141,054  | 151,837  | 160,735  | 170,385  | 180,642  | 191,438  | 202,925  | 215,100  | 228,006  | 241,687  | 256,188  | 271,559  | 287,853   | 305,124   | 323,431   | 342,837   | 363,407   | 385,212   | 408,224   | 432,504   | 458,139   | 485,121   | 513,550   | 543,430   | 574,761   | 607,554   | 641,811   | 677,535   | 714,739   | 753,427   | 793,604   | 835,275   |           |
| % Crecimiento                     | na        | na        | 203.54%  | 6.00%    | 6.00%    | 6.00%    | 6.00%    | 6.00%    | 6.00%    | 6.00%    | 6.00%    | 6.00%    | 6.00%    | 6.00%    | 6.00%     | 6.00%     | 6.00%     | 6.00%     | 6.00%     | 6.00%     | 6.00%     | 6.00%     | 6.00%     | 6.00%     | 6.00%     | 6.00%     | 6.00%     | 6.00%     | 6.00%     | 6.00%     | 6.00%     | 6.00%     | 6.00%     | 6.00%     |           |
| Total de Costos & Advers          | --        | (20,534)  | (85,129) | (87,438) | (88,712) | (89,284) | (90,539) | (91,779) | (93,005) | (94,217) | (95,416) | (96,604) | (97,782) | (98,951) | (100,111) | (101,262) | (102,405) | (103,541) | (104,670) | (105,792) | (106,908) | (108,018) | (109,122) | (110,220) | (111,314) | (112,404) | (113,490) | (114,572) | (115,650) | (116,724) | (117,794) | (118,860) | (119,922) | (120,980) | (122,034) |
| Utilidad de Operación (Preval)    | --        | 13,484    | 55,925   | 64,401   | 72,023   | 81,101   | 90,903   | 101,459  | 112,710  | 124,685  | 137,590  | 151,443  | 166,203  | 182,006  | 198,742   | 216,512   | 235,226   | 254,896   | 275,637   | 297,415   | 320,236   | 344,106   | 369,018   | 394,972   | 421,960   | 449,970   | 479,000   | 509,050   | 540,120   | 572,210   | 605,320   | 639,450   | 674,600   | 710,770   |           |
| Depreciación                      | --        | 4,882     | 19,368   | 19,368   | 19,368   | 19,368   | 19,368   | 19,368   | 19,368   | 19,368   | 19,368   | 19,368   | 19,368   | 19,368   | 19,368    | 19,368    | 19,368    | 19,368    | 19,368    | 19,368    | 19,368    | 19,368    | 19,368    | 19,368    | 19,368    | 19,368    | 19,368    | 19,368    | 19,368    | 19,368    | 19,368    | 19,368    | 19,368    | 19,368    |           |
| EMBOA                             | --        | 17,564    | 77,213   | 83,589   | 90,911   | 97,663   | 103,431  | 111,227  | 122,588  | 132,043  | 142,137  | 152,968  | 164,400  | 176,480  | 189,151   | 202,472   | 216,512   | 231,322   | 246,852   | 263,162   | 279,292   | 296,202   | 313,852   | 332,202   | 351,202   | 370,802   | 391,002   | 411,802   | 433,202   | 455,202   | 477,802   | 501,002   | 524,802   | 549,202   |           |
| (-) Cambios en Capital de Trabajo | --        | 21,508    | 26,106   | 4,928    | 4,928    | 4,928    | 4,928    | 4,928    | 4,928    | 4,928    | 4,928    | 4,928    | 4,928    | 4,928    | 4,928     | 4,928     | 4,928     | 4,928     | 4,928     | 4,928     | 4,928     | 4,928     | 4,928     | 4,928     | 4,928     | 4,928     | 4,928     | 4,928     | 4,928     | 4,928     | 4,928     | 4,928     | 4,928     | 4,928     |           |
| (-) Inversión                     | --        | --        | --       | --       | --       | --       | --       | --       | --       | --       | --       | --       | --       | --       | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        |           |
| Ingreso neto no actualizado       | --        | 84,552    | 88,369   | 84,559   | 86,948   | 91,204   | 104,958  | 114,235  | 122,077  | 131,217  | 140,593  | 150,195  | 160,018  | 170,063  | 180,342   | 190,876   | 201,666   | 212,712   | 224,024   | 235,510   | 247,182   | 259,050   | 271,114   | 283,374   | 295,830   | 308,482   | 321,330   | 334,374   | 347,614   | 361,050   | 374,682   | 388,412   | 402,244   | 416,178   |           |
| (-) Inversión en Activo Fijo      | (184,684) | (225,546) | --       | --       | --       | --       | --       | --       | --       | --       | --       | --       | --       | --       | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        | --        |           |           |
| (-) Costo Financiero              | (184,490) | (224,852) | (2,851)  | (2,851)  | (2,851)  | (2,771)  | (2,738)  | (2,703)  | (2,666)  | (2,628)  | (2,589)  | (2,549)  | (2,508)  | (2,466)  | (2,423)   | (2,379)   | (2,334)   | (2,288)   | (2,241)   | (2,193)   | (2,144)   | (2,094)   | (2,043)   | (1,990)   | (1,936)   | (1,881)   | (1,825)   | (1,768)   | (1,710)   | (1,651)   | (1,591)   | (1,530)   | (1,468)   |           |           |
| Flujo Neto no Actualizado         | (184,684) | (225,490) | 80,717   | 84,097   | 87,355   | 94,487   | 102,260  | 110,542  | 119,344  | 128,615  | 138,356  | 148,567  | 159,247  | 170,496  | 182,315   | 194,614   | 207,393   | 220,662   | 234,420   | 248,668   | 263,406   | 278,634   | 294,352   | 310,560   | 327,258   | 344,446   | 362,124   | 380,292   | 398,950   | 418,108   | 437,766   | 457,924   | 478,582   |           |           |

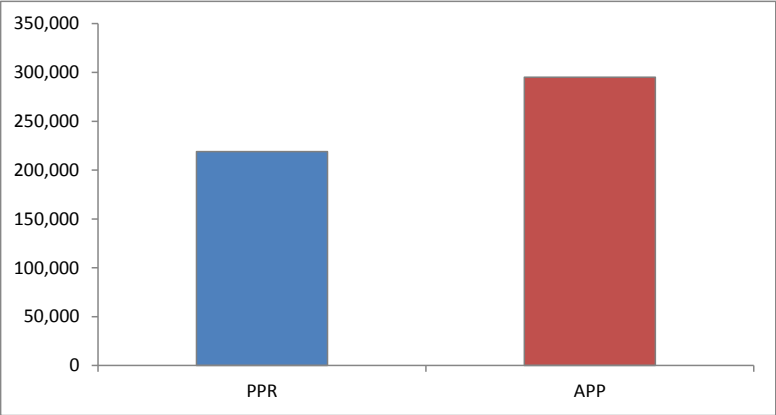
| <b>Valor Presente</b>              |                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------------|----------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Tasa de Descuento                  | 12.00%         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| VP del Proyecto                    | 781,246.62     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Costo Transferencia (VPN)          | (160,739)      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Costo del Seguro Política (VPN)    | (111,301)      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Costo del Seguro Faltas (VPN)      | (105,500)      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Costo por Riesgos Retardados (VPN) | (89,451)       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>VPN PPR</b>                     | <b>214,875</b> |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>TIR PPR</b>                     | <b>22.48%</b>  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|                                      | 2016          | 2017          | 2018          | 2019          | 2020          | 2021          | 2022          | 2023          | 2024          | 2025          | 2026          | 2027          | 2028          | 2029          | 2030          | 2031          | 2032          | 2033          | 2034          | 2035          | 2036          | 2037          | 2038          | 2039          | 2040          | 2041          | 2042          | 2043          | 2044          | 2045          |               |         |        |
|--------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------|--------|
| <b>Cambios en Capital Circulante</b> |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |         |        |
| Activos Circulante - Efectivo        | 38,588        | 38,593        | 17,288        | 17,996        | 18,205        | 18,105        | 18,927        | 20,952        | 21,251        | 21,984        | 22,742        | 23,527        | 24,339        | 25,179        | 26,047        | 26,944        | 27,871        | 28,827        | 29,812        | 30,825        | 31,866        | 32,934        | 34,029        | 35,151        | 36,299        | 37,474        | 38,675        | 39,901        | 41,151        | 42,424        | 43,720        | 45,039  | 46,381 |
| Pasivo Circulante - Deudas           | --            | 1,593         | 6,484         | 6,851         | 6,827         | 7,208         | 7,125         | 7,388         | 7,588         | 7,795         | 8,207         | 8,459         | 8,806         | 9,191         | 9,617         | 9,729         | 10,009        | 10,307        | 10,620        | 10,951        | 11,301        | 11,566        | 11,904        | 12,205        | 12,483        | 12,831        | 13,154        | 13,452        | 13,725        | 14,073        | 14,396        | 14,694  |        |
| <b>Total Capital de Trabajo</b>      | <b>38,588</b> | <b>37,000</b> | <b>10,804</b> | <b>11,145</b> | <b>11,377</b> | <b>11,277</b> | <b>11,539</b> | <b>13,564</b> | <b>13,663</b> | <b>14,149</b> | <b>14,744</b> | <b>15,297</b> | <b>15,879</b> | <b>16,462</b> | <b>17,106</b> | <b>17,751</b> | <b>18,418</b> | <b>19,109</b> | <b>19,823</b> | <b>20,562</b> | <b>21,326</b> | <b>22,116</b> | <b>22,934</b> | <b>23,781</b> | <b>24,658</b> | <b>25,565</b> | <b>26,493</b> | <b>27,441</b> | <b>28,409</b> | <b>29,397</b> | <b>30,405</b> |         |        |
| Cambios                              | 21,588        | 21,146        | (428)         | (444)         | (460)         | (471)         | (492)         | (528)         | (528)         | (544)         | (563)         | (583)         | (602)         | (624)         | (645)         | (667)         | (689)         | (714)         | (739)         | (764)         | (791)         | (818)         | (846)         | (875)         | (904)         | (933)         | (963)         | (993)         | (1,023)       | (1,053)       | (1,083)       |         |        |
| Tir con Costos asociados por riesgo  | 1048,626      | 1022,484      | 105,517       | 80,328        | 87,121        | 94,403        | 102,184       | 110,497       | 119,276       | 128,629       | 138,579       | 149,129       | 160,283       | 172,041       | 184,504       | 197,672       | 211,546       | 226,126       | 241,411       | 257,401       | 274,104       | 291,520       | 309,651       | 328,497       | 348,059       | 368,337       | 389,331       | 411,041       | 433,466       | 456,606       | 480,461       | 505,029 |        |



# Comparador Público/Privado

Valores en Miles de Pesos



| Proyecto Publico de Referencia |
|--------------------------------|
| 218,873                        |

| Proyecto APP |
|--------------|
| 295,024      |

Un grupo de beneficios relacionados con las repercusiones sanitarias y cuya cuantificación es relativamente fácil son los costos evitados gracias a la disminución de las enfermedades. Esos beneficios dicen respecto tanto al sector de la salud como al propio paciente. El ahorro en atención sanitaria se debe sobre todo a la reducción del número de tratamientos de casos de diarrea. Por su parte, los pacientes evitarán los costos relacionados con la búsqueda de tratamiento, entre ellos los gastos en asistencia, fármacos y transportes, así como los costos de oportunidad del tiempo invertido en la búsqueda de asistencia. El ahorro mundial con la intervención 1 sería de US\$ 2100 millones anuales, y aumentaría a US\$ 7300 millones anuales con la intervención 2.

|                      |               |
|----------------------|---------------|
| Total                | 9400 millones |
| Población Mundial    | 7,377,634,000 |
| Posible pob afectada | 35.0%         |

|            |            |         |
|------------|------------|---------|
| Per Capita | 3.64034633 |         |
| Pob. Benef | 520,000    | 520,000 |
| % Ajuste   | 70%        |         |
| Impacto    | 1,325      |         |