

Appendix A

Servicing Options Construction Cost Estimates

Table A1 - Distribution System and Transmission Line

Note:

- Water distribution lines will not be included in the infrastructure charge fee
- Transmission line, pump house and reservoirs, will be included in the infrastructure charge fee calculation

Table A2 - Reservoir and Pumphouse

Table A3 - Summary of Servicing Option Shareable Components

Table A4 - Staged Implementation of Cost Sharing Components for Options 2A and 2B

**Table A-1
Distribution System and Transmission Line
Construction Cost Estimates**

**Option 1a
North Reservoirs located in Clairmont Heights**

| | Length (m) | Incremental (m) | Unit Price (\$) | Cost (\$) | |
|---------------------------------|---------------|--------------------|--------------------|--------------|-------------------|
| Existing Pipes | | | | | |
| 150 mm | 13,875.66 | | | | |
| 200 mm | 6,051.31 | | | | |
| 250 mm | 5,785.53 | | | | |
| 300 mm | 5,277.62 | | | | |
| 350 mm | | | | | |
| 400 mm | | | | | |
| 500 mm | | | | | |
| 5 Year Contour | | | | | |
| 150 mm | 13,875.66 | | 0.00 | | |
| 200 mm | 6,051.31 | | 0.00 | | |
| 250 mm | 40,283.11 | 34,497.58 | 245.80 | 8,479,505 | |
| 300 mm | 11,114.47 | 5,836.85 | 276.00 | 1,610,971 | |
| 350 mm | 3,969.50 | 3,969.50 | 312.80 | 1,241,660 | |
| 400 mm | | | 356.80 | | |
| 500 mm | 818.00 | 818.00 | 461.80 | 377,752 | |
| 600 mm | 8,075.70 | 8,075.70 | 571.80 | 4,617,685 | |
| Transmission Line 600 mm | 7,020.00 | 7,020.00 | 571.80 | 4,014,036 | |
| PRV Station | | | | 100,000 | |
| Sub-Total | | | | | 20,441,609 |
| 10 Year Contour | | | | | |
| 150 mm | 13,875.66 | | 0.00 | | |
| 200 mm | 6,051.31 | | 0.00 | | |
| 250 mm | 49,206.81 | 8,923.70 | 245.80 | 2,193,445 | |
| 300 mm | 11,114.47 | | 276.00 | | |
| 350 mm | 3,969.50 | | 312.80 | | |
| 400 mm | | | 356.80 | | |
| 500 mm | 818.00 | | 461.80 | | |
| 600 mm | 8,075.70 | | 571.80 | | |
| Transmission Line 600 mm | 10,320.00 | 3,300.00 | 571.80 | 1,886,940 | |
| Sub-Total | | | | | 4,080,385 |
| 20 Year Contour | | | | | |
| 150 mm | 13,875.66 | | 0.00 | | |
| 200 mm | 6,051.31 | | 0.00 | | |
| 250 mm | 57,128.81 | 7,922.00 | 245.80 | 1,947,228 | |
| 300 mm | 11,114.47 | | 276.00 | | |
| 350 mm | 3,969.50 | | 312.80 | | |
| 400 mm | | | 356.80 | | |
| 500 mm | 818.00 | | 461.80 | | |
| 600 mm | 8,075.70 | | 571.80 | | |
| Transmission Line 600 mm | 10,320.00 | | 571.80 | | |
| Sub-Total | | | | | 1,947,228 |
| Ultimate Contour | | | | | |
| 150 mm | 13,875.66 | | 0.00 | | |
| 200 mm | 6,051.31 | | 0.00 | | |
| 250 mm | 65,963.41 | 8,834.60 | 245.80 | 2,171,545 | |
| 300 mm | 13,258.47 | 2,144.00 | 276.00 | 591,744 | |
| 350 mm | 3,969.50 | | 312.80 | | |
| 400 mm | | | 356.80 | | |
| 500 mm | 818.00 | | 461.80 | | |
| 600 mm | 8,075.70 | | 571.80 | | |
| Transmission Line 600 mm | 10,320.00 | | 571.80 | | |
| Sub-Total | | | | | 2,763,289 |
| Sub-Total | | | | | 29,232,511 |
| Fittings (30%) | | | | | 8,739,753 |
| Road Crossings (10%) | | | | | 2,724,557 |
| Total | | | | | 40,696,821 |
| Engineering & Contingency (35%) | | | | | 14,243,887 |
| TOTAL | | | | | 54,940,708 |

Table A-1 Cont'd
Distribution System and Transmission Line
Construction Cost Estimates

Option 1b
North Reservoirs located in West Clairmont

| | Length (m) | Incremental (m) | Unit Price (\$) | Cost (\$) | |
|---------------------------------|-----------------------|----------------------------|----------------------------|----------------------|-------------------|
| Existing Pipes | | | | | |
| 150 mm | 13,875.66 | | | | |
| 200 mm | 6,051.31 | | | | |
| 250 mm | 5,785.53 | | | | |
| 300 mm | 5,277.62 | | | | |
| 350 mm | | | | | |
| 400 mm | | | | | |
| 450 mm | | | | | |
| 500 mm | | | | | |
| 5 Year Contour | | | | | |
| 150 mm | 13,875.66 | | | | |
| 200 mm | 6,051.31 | | | | |
| 250 mm | 40,740.21 | 34,954.68 | 245.80 | 8,591,860 | |
| 300 mm | 11,869.67 | 6,592.05 | 276.80 | 1,824,679 | |
| 350 mm | 7,561.30 | 7,561.30 | 312.80 | 2,365,175 | |
| 400 mm | 1,648.40 | 1,648.40 | 356.80 | 588,149 | |
| 450mm | | | 403.80 | | |
| 500 mm | 2,852.50 | 2,852.50 | 461.80 | 1,317,285 | |
| 600 mm | 2,065.60 | 2,065.60 | 571.80 | 1,181,110 | |
| Transmission Line 600 mm | 2,200.00 | 2,200.00 | 571.80 | 1,257,960 | |
| Sub-Total | | | | | 17,126,218 |
| 10 Year Contour | | | | | |
| 150 mm | 13,875.66 | | | | |
| 200 mm | 6,051.31 | | | | |
| 250 mm | 49,667.81 | 8,927.60 | 245.80 | 2,194,404 | |
| 300 mm | 11,869.67 | | 276.80 | | |
| 350 mm | 7,561.30 | | 312.80 | | |
| 400 mm | 1,648.40 | | 356.80 | | |
| 450mm | | | 403.80 | | |
| 500 mm | 2,852.50 | | 461.80 | | |
| 600 mm | 2,065.60 | | 571.80 | | |
| Transmission Line 600 mm | 9,220.00 | 7,020.00 | 571.80 | 4,014,036 | |
| Sub-Total | | | | | 6,208,440 |
| 20 Year Contour | | | | | |
| 150 mm | 13,875.66 | | | | |
| 200 mm | 6,051.31 | | | | |
| 250 mm | 57,543.41 | 7,875.60 | 245.80 | 1,935,822 | |
| 300 mm | 11,869.67 | | 276.80 | | |
| 350 mm | 7,561.30 | | 312.80 | | |
| 400 mm | 1,648.40 | | 356.80 | | |
| 450mm | | | 403.80 | | |
| 500 mm | 2,852.50 | | 461.80 | | |
| 600 mm | 2,065.60 | | 571.80 | | |
| Transmission Line 600 mm | 9,220.00 | | 571.80 | | |
| Sub-Total | | | | | 1,935,822 |
| Ultimate Contour | | | | | |
| 150 mm | 13,875.66 | | | | |
| 200 mm | 6,051.31 | | | | |
| 250 mm | 66,338.31 | 8,794.90 | 245.80 | 2,161,786 | |
| 300 mm | 13,957.77 | 2,088.10 | 276.80 | 577,986 | |
| 350 mm | 7,561.30 | | 312.80 | | |
| 400 mm | 1,648.40 | | 356.80 | | |
| 450mm | | | 403.80 | | |
| 500 mm | 2,852.50 | | 461.80 | | |
| 600 mm | 2,065.60 | | 571.80 | | |
| Transmission Line 600 mm | 9,220.00 | | 571.80 | | |
| Sub-Total | | | | | 2,739,773 |
| Sub-Total | | | | | 28,010,253 |
| Fittings (30%) | | | | | 8,403,076 |
| Road Crossings (10%) | | | | | 2,801,025 |
| Total | | | | | 39,214,354 |
| Engineering & Contingency (35%) | | | | | 13,725,024 |
| TOTAL | | | | | 52,939,379 |

Table A-1 Cont'd
Distribution System and Transmission Line
Construction Cost Estimates

Option 2a
North Reservoirs located in Clairmont Heights

| | Length (m) | Incremental (m) | Unit Price (\$) | Cost (\$) | |
|---------------------------------|---------------|--------------------|--------------------|--------------|-------------------|
| Existing Pipes | | | | | |
| 150 mm | 13,875.66 | | | | |
| 200 mm | 6,051.31 | | | | |
| 250 mm | 5,785.53 | | | | |
| 300 mm | 5,277.62 | | | | |
| 350 mm | | | | | |
| 400 mm | | | | | |
| 500 mm | | | | | |
| 5 Year Contour | | | | | |
| 150 mm | 13,875.66 | | | | |
| 200 mm | 6,051.31 | | | | |
| 250 mm | 44,180.11 | 38,394.58 | 245.80 | 9,437,388 | |
| 300 mm | 9,425.07 | 4,147.45 | 276.00 | 1,144,696 | |
| 350 mm | 1,953.70 | 1,953.70 | 312.80 | 611,117 | |
| 400 mm | 3,778.20 | 3,778.20 | 356.80 | 1,348,062 | |
| 500 mm | 5,615.00 | 5,615.00 | 461.80 | 2,593,007 | |
| 350 mm ¹ | 100.00 | 100.00 | 312.80 | 31,280 | |
| 400 mm ² | 800.00 | 800.00 | 356.80 | 285,440 | |
| PRV Station | | | | 100,000 | |
| Sub-Total | | | | | 15,550,990 |
| 10 year Contour | | | | | |
| 150 mm | 13,875.66 | | | | |
| 200 mm | 6,051.31 | | | | |
| 250 mm | 52,689.61 | 8,509.50 | 245.80 | 2,091,635 | |
| 300 mm | 9,424.87 | -0.20 | 276.00 | | |
| 350 mm | 1,953.70 | | 312.80 | | |
| 400 mm ³ | 7,078.20 | 3,300.00 | 356.80 | 1,177,440 | |
| 500 mm | 5,614.90 | -0.10 | 461.80 | | |
| Sub-Total | | | | | |
| 20 Year Contour | | | | | |
| 150 mm | 13,875.66 | | | | 3,269,075 |
| 200 mm | 6,051.31 | | | | |
| 250 mm | 59,174.61 | 6,485.00 | 245.80 | 1,594,013 | |
| 300 mm | 9,425.47 | 0.60 | 276.00 | 166 | |
| 350 mm | 1,953.70 | | 312.80 | | |
| 400 mm ⁴ | 14,098.20 | 7,020.00 | 356.80 | 2,504,736 | |
| 500 mm | 5,614.90 | | 461.80 | | |
| Sub-Total | | | | | 4,098,915 |
| Ultimate Contour | | | | | |
| 150 mm | 13,875.66 | | | | |
| 200 mm | 6,051.31 | | | | |
| 250 mm | 68,253.21 | 9,078.60 | 245.80 | 2,231,520 | |
| 300 mm | 11,528.77 | 2,103.30 | 276.00 | 580,511 | |
| 350 mm | 1,953.70 | | 312.80 | | |
| 400 mm | 14,098.20 | | 356.80 | | |
| 500 mm | 5,615.60 | 0.70 | 461.80 | 323 | |
| Sub-Total | | | | | 2,812,354 |
| Sub-Total | | | | | |
| Fittings (30%) | | | | | 25,731,334 |
| Road Crossings (10%) | | | | | 7,689,400 |
| Total | | | | | 2,563,133 |
| Engineering & Contingency (35%) | | | | | 35,983,867 |
| TOTAL | | | | | 12,594,354 |
| | | | | | 48,578,221 |

¹(Connecting regional line to new reservoir)

²(trunk distribution lines from new and Zone 3 reservoir, assumed 400m for each reservoir)

³(from Clairmont booster station to new reservoir)

⁴(regional line from Zone 3 reservoir to Clairmont booster station)

Table A-1 Cont'd
Distribution System and Transmission Line
Construction Cost Estimates

Option 2b
North Reservoirs located in West Clairmont

| | Length (m) | Incremental (m) | Unit Price (\$) | Cost (\$) | |
|-----------------------------------|-----------------------|----------------------------|----------------------------|----------------------|-------------------|
| Existing Pipes | | | | | |
| 150 mm | 13,875.66 | | | | |
| 200 mm | 6,051.31 | | | | |
| 250 mm | 5,785.53 | | | | |
| 300 mm | 5,277.62 | | | | |
| 350 mm | | | | | |
| 400 mm | | | | | |
| 450 mm | | | | | |
| 500 mm | | | | | |
| 5 Year Contour | | | | | |
| 150 mm | 13,875.66 | | | | |
| 200 mm | 6,051.31 | | | | |
| 250 mm | 44,617.21 | 38,831.68 | 245.80 | 9,544,827 | |
| 300 mm | 10,128.87 | 4,851.25 | 276.80 | 1,342,826 | |
| 350 mm | 5,550.90 | 5,550.90 | 312.80 | 1,736,322 | |
| 400 mm | 6,245.30 | 6,245.30 | 356.80 | 2,228,323 | |
| 450mm ¹ | 2,200.00 | 2,200.00 | 403.80 | 888,360 | |
| 500 mm | 817.50 | 817.50 | 461.80 | 377,522 | |
| 400 mm ² | 800.00 | 800.00 | 356.80 | 285,440 | |
| PRV Station | | | | 100,000 | |
| Sub-Total | | | | | 16,503,619 |
| Fittings (30%) | | | | | 4,951,086 |
| Road Crossing (10%) | | | | | 1,650,362 |
| Engineering and Contingency (35%) | | | | | 8,086,773 |
| TOTAL | | | | | 31,191,840 |
| 10 year Contour | | | | | |
| 150 mm | 13,875.66 | | | | |
| 200 mm | 6,051.31 | | | | |
| 250 mm | 53,066.31 | 8,449.10 | 245.80 | 2,076,789 | |
| 300 mm | 10,129.47 | 0.60 | 276.80 | 166 | |
| 350 mm | 5,550.90 | | 312.80 | | |
| 400 mm | 6,245.30 | | 356.80 | | |
| 450mm | 2,200.00 | | 403.80 | | |
| 500 mm | 817.50 | | 461.80 | | |
| Sub-Total | | | | | 2,076,955 |
| Fittings (30%) | | | | | 623,086 |
| Road Crossing (10%) | | | | | 207,695 |
| Engineering and Contingency (35%) | | | | | 1,017,708 |
| TOTAL | | | | | 3,925,445 |
| 20 Year Contour | | | | | |
| 150 mm | 13,875.66 | | | | |
| 200 mm | 6,051.31 | | | | |
| 250 mm | 59,527.71 | 6,461.40 | 245.80 | 1,588,212 | |
| 300 mm | 10,129.47 | | 276.80 | | |
| 350 mm | 5,550.90 | | 312.80 | | |
| 400 mm | 6,245.30 | | 356.80 | | |
| 450mm | 2,200.00 | | 403.80 | | |
| 500 mm | 817.50 | | 461.80 | | |
| Sub-Total | | | | | 1,588,212 |
| Fittings (30%) | | | | | 476,464 |
| Road Crossing (10%) | | | | | 158,821 |
| Engineering and Contingency (35%) | | | | | 778,224 |
| TOTAL | | | | | 3,001,721 |

Table A-1 Cont'd
Distribution System and Transmission Line
Construction Cost Estimates

Option 2b
North Reservoirs located in West Clairmont

| | | | | |
|-----------------------------------|-----------|----------|--------|-------------------|
| Ultimate Contour | | | | |
| 150 mm | 13,875.66 | | | |
| 200 mm | 6,051.31 | | | |
| 250 mm | 68,587.31 | 9,059.60 | 245.80 | 2,226,850 |
| 300 mm | 12,234.67 | 2,105.20 | 276.80 | 582,719 |
| 350 mm | 5,550.90 | | 312.80 | |
| 400 mm ³ | 10,800.10 | 4,554.80 | 356.80 | 1,625,153 |
| 450mm | 2,200.00 | | 403.80 | |
| 500 mm | 817.50 | | 461.80 | |
| Sub-Total | | | | 4,434,722 |
| Fittings (30%) | | | | 1,330,417 |
| Road Crossing (10%) | | | | 443,472 |
| Engineering and Contingency (35%) | | | | 2,173,014 |
| TOTAL | | | | 8,381,624 |
| GRAND TOTAL | | | | 46,500,629 |
| | | | | |
| Sub-Total | | | | 24,603,508 |
| Fittings (30%) | | | | 7,381,052 |
| Road Crossings (10%) | | | | 2,460,351 |
| Total | | | | 34,444,911 |
| Engineering & Contingency (35%) | | | | 12,055,719 |
| TOTAL | | | | 46,500,629 |

¹From the Tee intersection to the new Reservoir (Cost Sharing)

²(trunk distribution line from new and Zone 3 reservoir, assumed 400 m from each reservoir, instructed by Tim)

³From Zone 3 reservoir to Tee intersection (Cost Sharing)

**Table A-2
Reservoir and Pumphouse Construction Cost Estimates**

Options 1a and 1b

| West Clairmont/Clairmont Heights Reservoir | Construction Cost (\$) |
|---|-------------------------------|
| Reservoir | 14,000,000 |
| Site Works | 200,000 |
| Pumps and Pumphouse | 700,000 |
| Mechanical, Electrical and Control | 300,000 |
| Engineering and Contingency (35%) | 4,970,000 |
| Total | 20,170,000 |

Options 2a and 2b

| Zone 3 Reservoir Expansion | 2006 | 2025 | Total |
|-----------------------------------|------------------|------------------|------------------|
| | \$ | \$ | \$ |
| Reservoir | 3,500,000 | 3,500,000 | |
| Site Works | 50,000 | 100,000 | |
| Engineering and Contingency (35%) | 1,242,500 | 1,260,000 | |
| Total | 4,792,500 | 4,860,000 | 9,652,500 |

**West Clairmont or
Clairmont Heights Reservoir**

| | | | |
|------------------------------------|-------------------|-------------------|-------------------|
| Reservoir | 4,500,000 | 4,500,000 | |
| Site Works | 100,000 | 100,000 | |
| Pumps and Pumphouse | 500,000 | 100,000 | |
| Mechanical, Electrical and Control | 200,000 | 20,000 | |
| Engineering and Contingency (35%) | 1,855,000 | 1,652,000 | |
| Total | 7,155,000 | 6,372,000 | 13,527,000 |
| Grand Total | 11,947,500 | 11,232,000 | 23,179,500 |

**Table A-3
Summary of Servicing Options Shareable Components Cost Estimates**

| Components | Option 1a | Option 1b | Option 2a | Option 2b |
|------------------------------------|------------------|------------------|------------------|------------------|
| | (\$ m) | (\$ m) | (\$ m) | (\$ m) |
| Transmission Lines | 11.15 | 9.96 | 7.56 | 5.29 |
| Reservoirs | 20.1 | 20.1 | 23.18 | 23.18 |
| Zone 2 to Zone 3 Transmission Line | 2.42 | 2.42 | 2.42 | 2.42 |
| Z1 to Zone 3 Transmission Line | 11.3 | 11.3 | 11.3 | 11.3 |
| | 44.97 | 43.78 | 44.46 | 42.19 |

**Table A-4
Staged Implementation fo Cost Sharable Components for Options 2a and 2b**

| Water System Cost Sharing Components | Option 2a (\$ in millions) | Option 2b (\$ in millions) |
|--|---------------------------------------|---------------------------------------|
| 2006 | | |
| Reservoirs | | |
| Zone 3 Reservoir (3.5 ML) | 4.79 | 4.79 |
| Clairmont Heights Reservoir(4.5 ML) | 7.16 | |
| West Clairmont Reservoir (4.5 ML) | | 7.16 |
| Transmission Lines | | |
| Regional transmission line to West Clairmont reservoir 2200 m - 400 mm | | 1.68 |
| Regional transmission line to Clairmont Heights reservoir 100 m - 350 mm diameter | 0.06 | |
| Zone 2 to Zone 3 Transmission Line | 2.42 | 2.42 |
| Distribution line out from Zone 3 and the new reservoir 800 m - 400 mm dia. | 0.54 | 0.54 |
| 2015 | | |
| Transmission Lines | | |
| Clairmont Booster Station to Clairmont Height Reservoir 3300 m - 400 mm dia. | 2.23 | |
| 2025 | | |
| Reservoirs | | |
| Zone 3 Reservoir (3.5 ML) | 4.86 | 4.86 |
| Clairmont Heights Reservoir(4.5 ML) | 6.37 | |
| West Clairmont Reservoir(4.5 ML) | | 6.37 |
| Transmission Line | | |
| Zone 3 reservoir to Clairmont Booster Station 7020 m - 400 mm dia. | 4.73 | |
| Ultimate | | |
| Transmission Lines | | |
| Zone 3 reservoir to Tee intersection 4555 m - 400 mm dia. | | 3.07 |
| Zone 1 to Zone 3 750 mm | 11.30 | 11.30 |
| Total | 44.46 | 42.19 |



Appendix B

Levy and Cash Flow Projection

Table B-1
Water Development Area Land Use

| Area Ref. # | Development Area Description | Net Developable Area (ha.) | Residential Land Area (net ha.) | School Site Land Area (net ha.) | General Industrial and Commercial Land Area (net ha.) | Highway Industrial Land Area (net ha.) | Heavy Industrial Land Area (net ha.) |
|-------------|------------------------------|----------------------------|---------------------------------|---------------------------------|---|--|--------------------------------------|
| 1 | Clairmont Heights | 144.00 | 132.50 | - | 11.50 | - | - |
| 2 | Clairmont | 98.40 | 28.00 | - | - | 70.40 | - |
| 3 | Lakeside | 75.81 | 54.50 | 5.11 | - | 16.20 | - |
| 4 | Crossroads North | 187.69 | 17.70 | - | 124.00 | 45.99 | - |
| 5 | Crossroads North Phase 2 | 160.00 | 40.00 | - | 120.00 | - | - |
| 6 | 116 Street North | 240.00 | - | - | 240.00 | - | - |
| 7 | Kehr-Althen | 181.10 | - | - | 103.70 | 77.40 | - |
| 8 | West Clairmont | 196.00 | 77.80 | - | 64.50 | 52.30 | 1.40 |
| 9 | West Clairmont Ph 2 | 260.00 | 260.00 | - | - | - | - |
| 10 | Ferguson Lake | 310.00 | 260.00 | - | 50.00 | - | - |
| 11 | Crossroads South Phase 1 | 191.90 | - | - | 138.41 | 43.32 | 10.17 |
| 12 | Crossroads South Phase 2 | 307.80 | - | - | 170.62 | 30.75 | 106.43 |
| 13 | McRae | 129.40 | - | - | 129.40 | - | - |
| 14 | Balisky-Hodges | 164.80 | 66.50 | - | 64.10 | 34.20 | - |
| 15 | Althen Corner | 88.10 | 31.90 | - | 22.20 | 34.00 | - |
| 16 | 116 Street South | 315.00 | 240.00 | - | 75.00 | - | - |
| 17 | NW City Fringe | 130.00 | 130.00 | - | - | - | - |
| 18 | North Grande Prairie | 280.00 | - | - | 280.00 | - | - |
| | Total | 3,460.00 | 1,338.90 | 5.11 | 1,593.43 | 404.56 | 118.00 |
| | | 100.00% | 38.70% | 0.15% | 46.05% | 11.69% | 3.41% |

Notes

1. Water areas from ISL were noted as net areas therefore no reductions for MR and ROW has been made.

**Table B-2:
Water Infrastructure Summary**

| Project # | Description | Type | Diameter (mm) | Cost |
|-----------|---|-----------|---------------|-------------------|
| 1 | Zone 3 Reservoir (3.5ML) | Reservoir | | 4,790,000 |
| 2 | West Clairmont Reservoir (4.5ML) | Reservoir | | 7,160,000 |
| 3 | Regional Transmission Line to Clairmont Heights Reservoir 2200m | Watermain | 450 | 1,680,000 |
| 4 | Zone 2 to Zone 3 Transmission Line | Watermain | | 2,420,000 |
| 5 | Distribution line out from Zone 3 and the new reservoir 400m | Watermain | 400 | 540,000 |
| 6 | Zone 3 Reservoir (3.5ML) | Reservoir | | 4,860,000 |
| 7 | West Clairmont Reservoir (4.5ML) | Reservoir | | 6,370,000 |
| 8 | Zone 3 to Tee Intersection 4555m - 400mm dia. | Watermain | 400 | 3,070,000 |
| 9 | Zone 1 to Zone 3 | Watermain | 750 | 11,300,000 |
| | Total | | | 42,190,000 |

Notes:

1. Total cost includes a 25% Contingency and 10% Engineering
2. Costs reflected in 2006 dollars

**Table B-3:
Water Development Infrastructure Charges**

| Area Ref. # | Residential Rate Per Net ha. | School Site Rate Per Net ha. | General Industrial and Commercial Rate Per Net ha. | Highway Industrial Rate Per Net ha. | Heavy Industrial Rate Per Net ha. |
|--------------------|-------------------------------------|-------------------------------------|---|--|--|
| 1 | 9,985.10 | | 9,985.10 | | |
| 2 | 9,985.10 | | | 25,961.26 | |
| 3 | 9,985.10 | 9,985.10 | | 25,961.26 | |
| 4 | 9,985.10 | | 9,985.10 | | |
| 5 | 9,985.10 | | 9,985.10 | | |
| 6 | | | 9,985.10 | | |
| 7 | | | 9,985.10 | 25,961.26 | |
| 8 | 9,985.10 | | 9,985.10 | 25,961.26 | 19,970.20 |
| 9 | 9,985.10 | | | | |
| 10 | 9,985.10 | | 9,985.10 | | |
| 11 | | | 9,985.10 | 25,961.26 | 19,970.20 |
| 12 | | | 9,985.10 | 25,961.26 | 19,970.20 |
| 13 | | | 9,985.10 | | |
| 14 | 9,985.10 | | 9,985.10 | 25,961.26 | |
| 15 | 9,985.10 | | 9,985.10 | 25,961.26 | |
| 16 | 9,985.10 | | 9,985.10 | | |
| 17 | 9,985.10 | | | | |
| 18 | | | 9,985.10 | | |
| | Average Rate | Average Rate | Average Rate | Average Rate | Average Rate |
| 99 | 9,985.10 | 9,985.10 | 9,985.10 | 25,961.26 | 19,970.20 |

**Table B-4:
Water Infrastructure/Development Infrastructure Charges Cash Flow**

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|------------|------------|------------|-----------|------------|------------|------------|------------|
| Opening Balance | | -16,115,916 | -15,235,100 | -14,192,180 | -12,970,787 | -11,553,154 | -9,920,008 | -8,050,448 | -5,921,821 | -3,509,581 | -787,147 | 2,259,894 | 5,613,608 | 9,297,043 | 13,334,788 |
| Levy Receipts | 1,848,567 | 1,940,995 | 2,038,045 | 2,139,947 | 2,246,945 | 2,359,292 | 2,477,257 | 2,601,119 | 2,731,175 | 2,867,734 | 3,011,121 | 3,161,677 | 3,319,761 | 3,485,749 | 3,660,036 |
| Construction Disbursements | 17,419,500 | | | | | | | | | | | | | | |
| Balance | -15,570,933 | -14,174,920 | -13,197,054 | -12,052,232 | -10,723,842 | -9,193,862 | -7,442,751 | -5,449,328 | -3,190,645 | -641,847 | 2,223,974 | 5,421,571 | 8,933,369 | 12,782,792 | 16,994,824 |
| Interest Earnings (Cost) | -544,983 | -1,060,179 | -995,125 | -918,554 | -829,312 | -726,146 | -607,697 | -472,492 | -318,936 | -145,300 | 35,921 | 192,037 | 363,674 | 551,996 | 758,240 |
| Closing Balance | -16,115,916 | -15,235,100 | -14,192,180 | -12,970,787 | -11,553,154 | -9,920,008 | -8,050,448 | -5,921,821 | -3,509,581 | -787,147 | 2,259,894 | 5,613,608 | 9,297,043 | 13,334,788 | 17,753,064 |
| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 |
| Opening Balance | 17,753,064 | 22,579,831 | 27,844,892 | 33,580,010 | 39,819,028 | 16,056,550 | 21,886,796 | 28,259,925 | 35,215,651 | 42,796,299 | 1,168,504 | 7,643,330 | 14,762,719 | 22,574,937 | 31,131,471 |
| Levy Receipts | 3,843,038 | 4,035,190 | 4,236,949 | 4,448,797 | 4,671,237 | 4,904,799 | 5,150,039 | 5,407,540 | 5,677,917 | 5,961,813 | 6,259,904 | 6,572,899 | 6,901,544 | 7,246,621 | 7,608,952 |
| Construction Disbursements | | | | | 29,796,533 | | | | | 48,661,921 | | | | | |
| Balance | 21,596,102 | 26,615,021 | 32,081,842 | 38,028,807 | 14,693,731 | 20,961,349 | 27,036,835 | 33,667,466 | 40,893,568 | 96,191 | 7,428,408 | 14,216,230 | 21,664,263 | 29,821,559 | 38,740,423 |
| Interest Earnings (Cost) | 983,729 | 1,229,871 | 1,498,168 | 1,790,220 | 1,362,819 | 925,447 | 1,223,091 | 1,548,185 | 1,902,730 | 1,072,312 | 214,923 | 546,489 | 910,675 | 1,309,912 | 1,746,797 |
| Closing Balance | 22,579,831 | 27,844,892 | 33,580,010 | 39,819,028 | 16,056,550 | 21,886,796 | 28,259,925 | 35,215,651 | 42,796,299 | 1,168,504 | 7,643,330 | 14,762,719 | 22,574,937 | 31,131,471 | 40,487,221 |

**Table B-5
Combined Water and Sewer Infrastructure / Development Infrastructure Charge Cash Flow**

| Description | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|------------------|-------------------|-------------------|
| Sanitary | | | | | | | | | | | | | | | |
| Net Cash Flow | -1,243,846 | -14,273,863 | 2,367,950 | -602,977 | -9,234,781 | 3,612,320 | 2,636,247 | 3,391,411 | 2,219,410 | 3,665,047 | 5,368,601 | 5,637,031 | 5,918,883 | 6,214,827 | 6,329,188 |
| Effective Interest Balance | -621,923 | -8,424,312 | -14,966,970 | -15,132,171 | -21,110,302 | -25,399,254 | -24,052,918 | -22,722,793 | -21,507,977 | -20,071,307 | -16,959,475 | -12,643,822 | -7,750,933 | -2,226,643 | 3,889,499 |
| Cumulative Cash Flow | -1,243,846 | -15,561,243 | -13,782,995 | -15,433,660 | -25,727,693 | -23,593,094 | -22,734,794 | -21,027,087 | -20,398,272 | -18,238,784 | -14,275,174 | -9,825,306 | -4,791,491 | 880,770 | 7,054,093 |
| Interest Earned | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 194,475 |
| Interest Expense | -43,535 | -589,702 | -1,047,688 | -1,059,252 | -1,477,721 | -1,777,948 | -1,683,704 | -1,590,595 | -1,505,558 | -1,404,991 | -1,187,163 | -885,068 | -542,565 | -155,865 | 0 |
| Cumulative Cash Flow With Interest | -1,287,381 | -16,150,945 | -14,830,683 | -16,492,912 | -27,205,414 | -25,371,042 | -24,418,499 | -22,617,683 | -21,903,830 | -19,643,775 | -15,462,337 | -10,710,374 | -5,334,057 | 724,905 | 7,248,568 |
| Water | | | | | | | | | | | | | | | |
| Net Cash Flow | -15,570,933 | 1,940,995 | 2,038,045 | 2,139,947 | 2,246,945 | 2,359,292 | 2,477,257 | 2,601,119 | 2,731,175 | 2,867,734 | 3,011,121 | 3,161,677 | 3,319,761 | 3,485,749 | 3,660,036 |
| Effective Interest Balance | -7,785,467 | -15,145,418 | -14,216,077 | -13,122,206 | -11,847,315 | -10,373,508 | -8,681,379 | -6,749,888 | -4,556,233 | -2,075,714 | 718,413 | 3,840,733 | 7,273,488 | 11,039,917 | 15,164,806 |
| Cumulative Cash Flow | -15,570,933 | -14,174,920 | -13,197,054 | -12,052,232 | -10,723,842 | -9,193,862 | -7,442,751 | -5,449,328 | -3,190,645 | -641,847 | 2,223,974 | 5,421,571 | 8,933,369 | 12,782,792 | 16,994,824 |
| Interest Earned | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35,921 | 192,037 | 363,674 | 551,996 | 758,240 |
| Interest Expense | -544,983 | -1,060,179 | -995,125 | -918,554 | -829,312 | -726,146 | -607,697 | -472,492 | -318,936 | -145,300 | 0 | 0 | 0 | 0 | 0 |
| Cumulative Cash Flow With Interest | -16,115,916 | -15,235,100 | -14,192,180 | -12,970,787 | -11,553,154 | -9,920,008 | -8,050,448 | -5,921,821 | -3,509,581 | -787,147 | 2,259,894 | 5,613,608 | 9,297,043 | 13,334,788 | 17,753,064 |
| Total | -17,403,296 | -31,386,045 | -29,022,863 | -29,463,698 | -38,758,568 | -35,291,049 | -32,468,946 | -28,539,503 | -25,413,412 | -20,430,922 | -13,202,443 | -5,096,766 | 3,962,986 | 14,059,693 | 25,001,632 |

| Description | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 |
|------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|
| Sanitary | | | | | | | | | | | | | | | |
| Net Cash Flow | 6,499,432 | 6,235,006 | 6,299,950 | 7,540,153 | -36,402,492 | 8,744,885 | 9,182,130 | 9,641,236 | 10,123,298 | 10,629,463 | 11,160,936 | 11,718,983 | 12,304,932 | 12,920,178 | 13,566,187 |
| Effective Interest Balance | 10,498,284 | 17,390,417 | 24,527,416 | 32,673,838 | 19,876,361 | 7,041,376 | 16,356,952 | 26,586,482 | 37,798,073 | 50,064,357 | 63,462,774 | 78,075,872 | 93,991,623 | 111,303,759 | 130,112,130 |
| Cumulative Cash Flow | 13,748,000 | 20,507,920 | 27,677,391 | 36,443,915 | 1,675,115 | 11,413,818 | 20,948,016 | 31,407,100 | 42,859,722 | 55,379,088 | 69,043,242 | 83,935,363 | 100,144,089 | 117,763,848 | 136,895,223 |
| Interest Earned | 524,914 | 869,521 | 1,226,371 | 1,633,692 | 993,818 | 352,069 | 817,848 | 1,329,324 | 1,889,904 | 2,503,218 | 3,173,139 | 3,903,794 | 4,699,581 | 5,565,188 | 6,505,606 |
| Interest Expense | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cumulative Cash Flow With Interest | 14,272,914 | 21,377,441 | 28,903,761 | 38,077,607 | 2,668,933 | 11,765,887 | 21,765,864 | 32,736,424 | 44,749,626 | 57,882,306 | 72,216,381 | 87,839,157 | 104,843,670 | 123,329,036 | 143,400,830 |
| Water | | | | | | | | | | | | | | | |
| Net Cash Flow | 3,843,038 | 4,035,190 | 4,236,949 | 4,448,797 | -25,125,296 | 4,904,799 | 5,150,039 | 5,407,540 | 5,677,917 | -42,700,107 | 6,259,904 | 6,572,899 | 6,901,544 | 7,246,621 | 7,608,952 |
| Effective Interest Balance | 19,674,583 | 24,597,426 | 29,963,367 | 35,804,409 | 27,256,379 | 18,508,949 | 24,461,815 | 30,963,696 | 38,054,609 | 21,446,245 | 4,298,456 | 10,929,780 | 18,213,491 | 26,198,248 | 34,935,947 |
| Cumulative Cash Flow | 21,596,102 | 26,615,021 | 32,081,842 | 38,028,807 | 14,693,731 | 20,961,349 | 27,036,835 | 33,667,466 | 40,893,568 | 96,191 | 7,428,408 | 14,216,230 | 21,664,263 | 29,821,559 | 38,740,423 |
| Interest Earned | 983,729 | 1,229,871 | 1,498,168 | 1,790,220 | 1,362,819 | 925,447 | 1,223,091 | 1,548,185 | 1,902,730 | 1,072,312 | 214,923 | 546,489 | 910,675 | 1,309,912 | 1,746,797 |
| Interest Expense | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cumulative Cash Flow With Interest | 22,579,831 | 27,844,892 | 33,580,010 | 39,819,028 | 16,056,550 | 21,886,796 | 28,259,925 | 35,215,651 | 42,796,299 | 1,168,504 | 7,643,330 | 14,762,719 | 22,574,937 | 31,131,471 | 40,487,221 |
| Total | 36,852,745 | 49,222,333 | 62,483,772 | 77,896,634 | 18,725,483 | 33,652,683 | 50,025,789 | 67,952,075 | 87,545,924 | 59,050,810 | 79,859,711 | 102,601,875 | 127,418,607 | 154,460,507 | 183,888,050 |

**Table B-6
Water Infrastructure Charge Rates for Various Breakeven Years**

| Scenario | Rate Description | Sanitary Rates | Development Time Frame | 2030 Surplus/Deficit (Complete Infrastructure Buildout) | 2035 Surplus/Deficit (Full Development) |
|--|--|----------------|------------------------|---|---|
| Year 2035 Breakeven (Full Development) | Residential Rate per Net ha. | \$ 10,600.00 | 30 | | |
| | School Rate Per Net ha. | \$ 10,600.00 | 30 | | |
| | General Industrial Commercial Rate Per Net ha. | \$ 10,600.00 | 30 | -\$23,272,390.89 | \$2,046,898.67 |
| | Highway Industrial Rate per Net ha. | \$ 27,560.00 | 30 | | |
| | Heavy Industrial Rate Per Net ha. | \$ 21,200.00 | 30 | | |
| Year 2020 Breakeven | Residential Rate per Net ha. | \$ 12,500.00 | 30 | | |
| | School Rate Per Net ha. | \$ 12,500.00 | 30 | | |
| | General Industrial Commercial Rate Per Net ha. | \$ 12,500.00 | 30 | \$1,168,503.60 | \$40,487,220.80 |
| | Highway Industrial Rate per Net ha. | \$ 32,500.00 | 30 | | |
| | Heavy Industrial Rate Per Net ha. | \$ 25,000.00 | 30 | | |
| Year 2015 Breakeven | Residential Rate per Net ha. | \$ 13,000.00 | 30 | | |
| | School Rate Per Net ha. | \$ 13,000.00 | 30 | | |
| | General Industrial Commercial Rate Per Net ha. | \$ 13,000.00 | 30 | \$7,525,881.10 | \$50,160,859.73 |
| | Highway Industrial Rate per Net ha. | \$ 33,800.00 | 30 | | |
| | Heavy Industrial Rate Per Net ha. | \$ 26,000.00 | 30 | | |