

APPENDIX C

HECR-RAS Model Runs – Various Return Periods

Existing Condition with Starting Water Elevation Condition

Existing 2 year with Starting Water Elevation Condition

HEC-RAS Plan: E2MnHtTc River: Carp River Reach: Carp Profile: Max WS

| Reach | River Sta | Profile | Q Total (m3/s) | Min Ch El (m) | W.S. Elev (m) | Crit W.S. (m) | E.G. Elev (m) | Vel Chnl (m/s) | Top Width (m) | Froude # | Chl |
|-------|-----------|------------------------|-------------------|------------------|------------------|------------------|------------------|-------------------|------------------|----------|------|
| Carp | 44953 | Max WS | 3.56 | 92.75 | 93.93 | | 93.94 | 0.26 | 35.29 | | 0.09 |
| Carp | 44890 | Max WS | 3.55 | 92.63 | 93.91 | | 93.91 | 0.4 | 51.53 | | 0.14 |
| Carp | 44751 | Max WS | 3.52 | 92.38 | 93.86 | | 93.87 | 0.3 | 15.61 | | 0.09 |
| Carp | 44548 | Max WS | 4.5 | 92.43 | 93.83 | | 93.83 | 0.2 | 96.13 | | 0.06 |
| Carp | 44325 | Max WS | 4.6 | 92.11 | 93.78 | | 93.79 | 0.58 | 45.97 | | 0.16 |
| Carp | 44324 | Hazeldean Cul Culvert | | | | | | | | | |
| Carp | 44302 | Max WS | 4.53 | 92.6 | 93.74 | | 93.76 | 0.65 | 68.93 | | 0.2 |
| Carp | 44215 | Max WS | 4.51 | 92.7 | 93.74 | | 93.74 | 0.24 | 85.1 | | 0.08 |
| Carp | 44153 | Max WS | 4.51 | 92 | 93.73 | | 93.73 | 0.21 | 93.55 | | 0.06 |
| Carp | 43966 | Max WS | 4.5 | 91.99 | 93.72 | | 93.72 | 0.12 | 118.64 | | 0.03 |
| Carp | 43764 | Max WS | 4.86 | 92.3 | 93.72 | | 93.72 | 0.12 | 134.4 | | 0.03 |
| Carp | 43582 | Max WS | 4.92 | 92.34 | 93.71 | | 93.71 | 0.14 | 129.01 | | 0.04 |
| Carp | 43375 | Max WS | 4.98 | 91.62 | 93.66 | | 93.67 | 0.54 | 8.48 | | 0.13 |
| Carp | 43370 | Maple Grove C Culvert | | | | | | | | | |
| Carp | 43364 | Max WS | 4.98 | 91.01 | 93.66 | | 93.67 | 0.45 | 49.5 | | 0.1 |
| Carp | 43223 | Max WS | 4.98 | 91.91 | 93.65 | | 93.65 | 0.19 | 108.54 | | 0.05 |
| Carp | 43173 | Max WS | 4.98 | 92.2 | 93.65 | | 93.65 | 0.14 | 146.96 | | 0.04 |
| Carp | 43072 | Max WS | 9.32 | 92.12 | 93.63 | | 93.63 | 0.3 | 114.44 | | 0.09 |
| Carp | 42890 | Max WS | 9.54 | 91.68 | 93.59 | 92.34 | 93.6 | 0.35 | 69.34 | | 0.09 |
| Carp | 42885 | Palladium Driv Bridge | | | | | | | | | |
| Carp | 42855 | Max WS | 9.54 | 91.57 | 93.58 | | 93.59 | 0.34 | 139.05 | | 0.09 |
| Carp | 42686 | Max WS | 9.55 | 91.9 | 93.56 | | 93.57 | 0.23 | 113.05 | | 0.06 |
| Carp | 42558 | Max WS | 9.55 | 91.83 | 93.54 | | 93.54 | 0.31 | 60.94 | | 0.1 |
| Carp | 42410 | Max WS | 9.88 | 91.81 | 93.51 | | 93.51 | 0.29 | 81.6 | | 0.08 |
| Carp | 42212 | Max WS | 9.89 | 91.76 | 93.49 | | 93.49 | 0.13 | 117.09 | | 0.03 |
| Carp | 42182 | Max WS | 9.89 | 91.51 | 93.48 | 92.48 | 93.49 | 0.62 | 54.99 | | 0.16 |
| Carp | 42172 | Highway 417 S Bridge | | | | | | | | | |
| Carp | 42154 | Max WS | 9.89 | 91.24 | 93.46 | | 93.48 | 0.58 | 52.59 | | 0.15 |
| Carp | 42134 | Max WS | 9.89 | 91.88 | 93.45 | | 93.47 | 0.68 | 50.55 | | 0.19 |
| Carp | 42124 | Max WS | 9.89 | 91.36 | 93.44 | 92.39 | 93.46 | 0.61 | 49.7 | | 0.16 |
| Carp | 42119 | Highway 417 N Bridge | | | | | | | | | |
| Carp | 42097 | Max WS | 9.89 | 91.68 | 93.42 | | 93.44 | 0.66 | 18.33 | | 0.18 |
| Carp | 42075 | Max WS | 9.9 | 91.46 | 93.43 | | 93.43 | 0.24 | 96.12 | | 0.06 |
| Carp | 42002 | Max WS | 9.9 | 91.4 | 93.42 | | 93.42 | 0.2 | 98.19 | | 0.05 |
| Carp | 41896 | Max WS | 9.94 | 91.77 | 93.41 | | 93.41 | 0.2 | 98.03 | | 0.05 |
| Carp | 41743 | Max WS | 9.95 | 91.43 | 93.4 | | 93.4 | 0.19 | 145.34 | | 0.05 |
| Carp | 41671 | Max WS | 9.95 | 91.18 | 93.38 | | 93.4 | 0.67 | 106.8 | | 0.17 |
| Carp | 41357 | Max WS | 11.74 | 91.46 | 93.04 | | 93.04 | 0.36 | 287.06 | | 0.11 |
| Carp | 41117 | Max WS | 11.63 | 91.45 | 92.93 | | 92.93 | 0.39 | 360.76 | | 0.13 |
| Carp | 40910 | Max WS | 11.5 | 91.38 | 92.87 | | 92.87 | 0.25 | 310.21 | | 0.08 |
| Carp | 40703 | Max WS | 11.48 | 91.65 | 92.82 | | 92.82 | 0.32 | 292.94 | | 0.12 |
| Carp | 40505 | Max WS | 11.65 | 91.07 | 92.77 | | 92.77 | 0.26 | 220.21 | | 0.09 |
| Carp | 40298 | Max WS | 11.62 | 91.02 | 92.73 | | 92.73 | 0.23 | 299.48 | | 0.07 |
| Carp | 40092 | Max WS | 11.74 | 91.22 | 92.68 | | 92.69 | 0.39 | 166.32 | | 0.13 |
| Carp | 40071 | Max WS | 11.89 | 91.13 | 92.65 | | 92.69 | 0.87 | 161.34 | | 0.25 |
| Carp | 40070 | Richardson Sic Culvert | | | | | | | | | |

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|------|---------|--------|-------|-------|-------|-------|-------|--------|--------|------|
| Carp | 40050 | Max WS | 11.88 | 91.04 | 92.65 | 92.69 | 0.82 | 173.04 | 0.23 | |
| Carp | 39892 | Max WS | 12 | 91.02 | 92.63 | 92.64 | 0.36 | 82.55 | 0.11 | |
| Carp | 39695 | Max WS | 12.12 | 91.29 | 92.55 | 92.57 | 0.58 | 71.73 | 0.2 | |
| Carp | 39202 | Max WS | 12.04 | 90.57 | 92.36 | 92.37 | 0.5 | 83.63 | 0.12 | |
| Carp | 38697 | Max WS | 11.96 | 90.07 | 92.27 | 92.27 | 0.19 | 288.08 | 0.05 | |
| Carp | 38236 | Max WS | 11.98 | 90.16 | 92.22 | 92.23 | 0.46 | 248.91 | 0.11 | |
| Carp | 37894 | Max WS | 16.23 | 90.03 | 92.16 | 92.16 | 0.38 | 291.66 | 0.09 | |
| Carp | 37380.3 | Max WS | 16.06 | 89.67 | 92.11 | 90.68 | 92.14 | 0.72 | 280.66 | 0.16 |
| Carp | 37370 | Bridge | | | | | | | | |
| Carp | 37355.3 | Max WS | 15.93 | 89.66 | 92.09 | 92.12 | 0.72 | 266.05 | 0.16 | |
| Carp | 37101 | Max WS | 15.93 | 89.48 | 92.09 | 92.09 | 0.18 | 276.61 | 0.04 | |
| Carp | 36580 | Max WS | 15.89 | 89.1 | 92.08 | 92.08 | 0.17 | 375.04 | 0.03 | |
| Carp | 35288 | Max WS | 15.89 | 89.05 | 92.04 | 92.05 | 0.31 | 178.1 | 0.06 | |
| Carp | 35073 | Max WS | 15.89 | 89.27 | 92.03 | 92.04 | 0.27 | 113.51 | 0.06 | |
| Carp | 34555 | Max WS | 15.88 | 89.06 | 92.01 | 92.01 | 0.36 | 113.56 | 0.07 | |
| Carp | 33472 | Max WS | 15.93 | 88.54 | 91.98 | 91.98 | 0.17 | 210.33 | 0.03 | |
| Carp | 33201 | Max WS | 16.27 | 89.15 | 91.97 | 89.9 | 91.98 | 0.37 | 257.45 | 0.08 |
| Carp | 33197 | Bridge | | | | | | | | |
| Carp | 33181.1 | Max WS | 16.27 | 89.16 | 91.97 | 91.98 | 0.37 | 256.69 | 0.08 | |
| Carp | 32609 | Max WS | 16.27 | 89.56 | 91.96 | 91.97 | 0.15 | 295.67 | 0.03 | |
| Carp | 32096 | Max WS | 16.26 | 88.9 | 91.96 | 91.96 | 0.12 | 329.66 | 0.02 | |
| Carp | 31662 | Max WS | 16.21 | 88.74 | 91.95 | 89.52 | 91.96 | 0.3 | 139.03 | 0.06 |
| Carp | 31658 | Bridge | | | | | | | | |
| Carp | 31642.1 | Max WS | 16.07 | 88.75 | 91.95 | 91.96 | 0.31 | 135.16 | 0.06 | |
| Carp | 31414 | Max WS | -51.4 | 88.89 | 91.95 | 90.72 | 91.96 | -0.58 | 171.25 | 0.11 |

Existing 5 year with Starting Water Elevation Condition

HEC-RAS Plan: E5MnHtTc River: Carp River Reach: Carp Profile: Max WS

| Reach | River Sta | Profile | Q Total (m ³ /s) | Min Ch El (m) | W.S. Elev (m) | Crit W.S. (m) | E.G. Elev (m) | Vel Chnl (m/s) | Top Width (m) | Froude # | Chl |
|-------|-----------|----------------|--------------------------------|------------------|------------------|------------------|------------------|-------------------|------------------|----------|------|
| Carp | 44953 | Max WS | 5.26 | 92.75 | 94.18 | | 94.18 | 0.27 | 59.26 | | 0.08 |
| Carp | 44890 | Max WS | 5.23 | 92.63 | 94.16 | | 94.17 | 0.33 | 94.94 | | 0.1 |
| Carp | 44751 | Max WS | 5.2 | 92.38 | 94.13 | | 94.14 | 0.34 | 90.6 | | 0.09 |
| Carp | 44548 | Max WS | 6.8 | 92.43 | 94.1 | | 94.1 | 0.18 | 109.98 | | 0.05 |
| Carp | 44325 | Max WS | 6.99 | 92.11 | 94.06 | | 94.08 | 0.73 | 92.63 | | 0.18 |
| Carp | 44324 | Hazeldean Cul | | | | | | | | | |
| Carp | 44302 | Max WS | 6.88 | 92.6 | 93.97 | | 94 | 0.82 | 86.92 | | 0.23 |
| Carp | 44215 | Max WS | 6.88 | 92.7 | 93.97 | | 93.97 | 0.23 | 102.49 | | 0.07 |
| Carp | 44153 | Max WS | 6.88 | 92 | 93.97 | | 93.97 | 0.21 | 109.51 | | 0.05 |
| Carp | 43966 | Max WS | 6.86 | 91.99 | 93.96 | | 93.96 | 0.13 | 140.13 | | 0.03 |
| Carp | 43764 | Max WS | 7.38 | 92.3 | 93.96 | | 93.96 | 0.13 | 175.36 | | 0.03 |
| Carp | 43582 | Max WS | 7.46 | 92.34 | 93.95 | | 93.95 | 0.14 | 153.83 | | 0.04 |
| Carp | 43375 | Max WS | 7.53 | 91.62 | 93.88 | | 93.91 | 0.72 | 8.62 | | 0.17 |
| Carp | 43370 | Maple Grove C | | | | | | | | | |
| Carp | 43364 | Max WS | 7.53 | 91.01 | 93.89 | | 93.91 | 0.61 | 102.2 | | 0.13 |
| Carp | 43223 | Max WS | 7.52 | 91.91 | 93.88 | | 93.88 | 0.19 | 145.97 | | 0.05 |
| Carp | 43173 | Max WS | 7.52 | 92.2 | 93.88 | | 93.88 | 0.14 | 164.35 | | 0.04 |
| Carp | 43072 | Max WS | 14.84 | 92.12 | 93.86 | | 93.86 | 0.33 | 160.86 | | 0.09 |
| Carp | 42890 | Max WS | 15.15 | 91.68 | 93.81 | 92.46 | 93.82 | 0.48 | 79.66 | | 0.12 |
| Carp | 42885 | Palladium Driv | | | | | | | | | |
| Carp | 42855 | Max WS | 15.13 | 91.57 | 93.8 | | 93.81 | 0.48 | 153.83 | | 0.11 |
| Carp | 42686 | Max WS | 15.14 | 91.9 | 93.78 | | 93.78 | 0.28 | 119 | | 0.07 |

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|------|---------|------------------------|--------|-------|-------|-------|-------|--------|--------|------|
| Carp | 42558 | Max WS | 15.15 | 91.83 | 93.75 | 93.75 | 0.37 | 89.27 | 0.11 | |
| Carp | 42410 | Max WS | 15.5 | 91.81 | 93.71 | 93.72 | 0.36 | 90.77 | 0.09 | |
| Carp | 42212 | Max WS | 15.51 | 91.76 | 93.7 | 93.7 | 0.17 | 129.08 | 0.04 | |
| Carp | 42182 | Max WS | 15.51 | 91.51 | 93.67 | 92.66 | 93.7 | 0.83 | 89.18 | 0.21 |
| Carp | 42172 | Highway 417 S Bridge | | | | | | | | |
| Carp | 42154 | Max WS | 15.51 | 91.24 | 93.65 | 93.68 | 0.79 | 84.89 | 0.19 | |
| Carp | 42134 | Max WS | 15.51 | 91.88 | 93.63 | 93.66 | 0.9 | 81.7 | 0.24 | |
| Carp | 42124 | Max WS | 15.51 | 91.36 | 93.62 | 92.58 | 93.65 | 0.83 | 79.94 | 0.2 |
| Carp | 42119 | Highway 417 N Bridge | | | | | | | | |
| Carp | 42097 | Max WS | 15.52 | 91.68 | 93.58 | 93.62 | 0.91 | 23.67 | 0.23 | |
| Carp | 42075 | Max WS | 15.52 | 91.46 | 93.59 | 93.6 | 0.37 | 160.27 | 0.09 | |
| Carp | 42002 | Max WS | 15.52 | 91.4 | 93.59 | 93.59 | 0.26 | 111.83 | 0.06 | |
| Carp | 41896 | Max WS | 15.58 | 91.77 | 93.57 | 93.57 | 0.25 | 100.48 | 0.06 | |
| Carp | 41743 | Max WS | 15.59 | 91.43 | 93.56 | 93.56 | 0.23 | 160.08 | 0.06 | |
| Carp | 41671 | Max WS | 15.59 | 91.18 | 93.54 | 93.55 | 0.72 | 115.53 | 0.17 | |
| Carp | 41357 | Max WS | 18.76 | 91.46 | 93.16 | 93.16 | 0.39 | 315.35 | 0.11 | |
| Carp | 41117 | Max WS | 18.41 | 91.45 | 93.07 | 93.07 | 0.35 | 403.8 | 0.11 | |
| Carp | 40910 | Max WS | 18.33 | 91.38 | 93.03 | 93.03 | 0.25 | 344.86 | 0.08 | |
| Carp | 40703 | Max WS | 18.32 | 91.65 | 93 | 93 | 0.29 | 320.24 | 0.09 | |
| Carp | 40505 | Max WS | 18.59 | 91.07 | 92.96 | 92.96 | 0.27 | 257.53 | 0.08 | |
| Carp | 40298 | Max WS | 18.57 | 91.02 | 92.93 | 92.93 | 0.24 | 363.5 | 0.06 | |
| Carp | 40092 | Max WS | 18.7 | 91.22 | 92.89 | 92.89 | 0.39 | 186.7 | 0.11 | |
| Carp | 40071 | Max WS | 18.84 | 91.13 | 92.84 | 92.91 | 1.2 | 197.41 | 0.32 | |
| Carp | 40070 | Richardson Sic Culvert | | | | | | | | |
| Carp | 40050 | Max WS | 18.84 | 91.04 | 92.84 | 92.91 | 1.14 | 203.81 | 0.3 | |
| Carp | 39892 | Max WS | 18.96 | 91.02 | 92.83 | 92.84 | 0.43 | 148.59 | 0.12 | |
| Carp | 39695 | Max WS | 19.07 | 91.29 | 92.75 | 92.77 | 0.64 | 148.57 | 0.2 | |
| Carp | 39202 | Max WS | 18.88 | 90.57 | 92.54 | 92.56 | 0.68 | 296.69 | 0.16 | |
| Carp | 38697 | Max WS | 18.78 | 90.07 | 92.46 | 92.46 | 0.2 | 343.44 | 0.05 | |
| Carp | 38236 | Max WS | 18.81 | 90.16 | 92.42 | 92.42 | 0.43 | 306.49 | 0.1 | |
| Carp | 37894 | Max WS | 25.37 | 90.03 | 92.37 | 92.37 | 0.38 | 325.29 | 0.09 | |
| Carp | 37380.3 | Max WS | 25.09 | 89.67 | 92.31 | 90.91 | 92.36 | 1.02 | 304.62 | 0.22 |
| Carp | 37370 | Bridge | | | | | | | | |
| Carp | 37355.3 | Max WS | 24.75 | 89.66 | 92.27 | 92.32 | 1.03 | 293.85 | 0.22 | |
| Carp | 37101 | Max WS | 24.82 | 89.48 | 92.28 | 92.28 | 0.22 | 298.29 | 0.05 | |
| Carp | 36580 | Max WS | 24.78 | 89.1 | 92.26 | 92.26 | 0.2 | 385.45 | 0.04 | |
| Carp | 35288 | Max WS | 24.71 | 89.05 | 92.21 | 92.21 | 0.4 | 222.88 | 0.08 | |
| Carp | 35073 | Max WS | 24.71 | 89.27 | 92.19 | 92.2 | 0.38 | 136.08 | 0.08 | |
| Carp | 34555 | Max WS | 24.7 | 89.06 | 92.15 | 92.16 | 0.5 | 127.05 | 0.1 | |
| Carp | 33472 | Max WS | 24.75 | 88.54 | 92.1 | 92.1 | 0.24 | 224.35 | 0.04 | |
| Carp | 33201 | Max WS | 25.17 | 89.15 | 92.09 | 90.09 | 92.1 | 0.54 | 274.73 | 0.11 |
| Carp | 33197 | Bridge | | | | | | | | |
| Carp | 33181.1 | Max WS | 25.17 | 89.16 | 92.08 | 92.09 | 0.55 | 274.16 | 0.11 | |
| Carp | 32609 | Max WS | 25.18 | 89.56 | 92.07 | 92.07 | 0.2 | 310.27 | 0.04 | |
| Carp | 32096 | Max WS | 25.16 | 88.9 | 92.06 | 92.06 | 0.17 | 342.58 | 0.03 | |
| Carp | 31662 | Max WS | 25.02 | 88.74 | 92.05 | 89.71 | 92.06 | 0.45 | 140.27 | 0.08 |
| Carp | 31658 | Bridge | | | | | | | | |
| Carp | 31642.1 | Max WS | 24.71 | 88.75 | 92.05 | 92.05 | 0.46 | 136.43 | 0.08 | |
| Carp | 31414 | Max WS | -56.01 | 88.89 | 92.04 | 90.77 | 92.05 | -0.59 | 178.55 | 0.11 |

Existing 25 year with Starting Water Elevation Condition

HEC-RAS Plan: E25MnHtTc River: Carp River Reach: Carp Profile: Max WS

| Reach | River Sta | Profile | Q Total (m3/s) | Min Ch El (m) | W.S. Elev (m) | Crit W.S. (m) | E.G. Elev (m) | Vel Chnl (m/s) | Top Width (m) | Froude # | Chl |
|-------|-----------|------------------------|-------------------|------------------|------------------|------------------|------------------|-------------------|------------------|----------|------|
| Carp | 44953 | Max WS | 7.43 | 92.75 | 94.5 | | 94.5 | 0.22 | 156.94 | | 0.06 |
| Carp | 44890 | Max WS | 7.39 | 92.63 | 94.49 | | 94.5 | 0.23 | 138.96 | | 0.06 |
| Carp | 44751 | Max WS | 7.39 | 92.38 | 94.48 | | 94.48 | 0.27 | 126.22 | | 0.06 |
| Carp | 44548 | Max WS | 9.97 | 92.43 | 94.47 | | 94.47 | 0.16 | 121.47 | | 0.04 |
| Carp | 44325 | Max WS | 10.22 | 92.11 | 94.44 | | 94.47 | 0.86 | 174.04 | | 0.19 |
| Carp | 44324 | Hazeldean Cul Culvert | | | | | | | | | |
| Carp | 44302 | Max WS | 10.17 | 92.6 | 94.25 | | 94.3 | 1.01 | 106.37 | | 0.25 |
| Carp | 44215 | Max WS | 10.17 | 92.7 | 94.26 | | 94.26 | 0.22 | 120.26 | | 0.06 |
| Carp | 44153 | Max WS | 10.16 | 92 | 94.26 | | 94.26 | 0.21 | 127.02 | | 0.05 |
| Carp | 43966 | Max WS | 10.16 | 91.99 | 94.25 | | 94.25 | 0.13 | 196.48 | | 0.03 |
| Carp | 43764 | Max WS | 10.95 | 92.3 | 94.25 | | 94.25 | 0.13 | 211.5 | | 0.03 |
| Carp | 43582 | Max WS | 11.05 | 92.34 | 94.24 | | 94.24 | 0.15 | 192.85 | | 0.04 |
| Carp | 43375 | Max WS | 11.05 | 91.62 | 94.17 | | 94.21 | 0.91 | 60.91 | | 0.2 |
| Carp | 43370 | Maple Grove C Culvert | | | | | | | | | |
| Carp | 43364 | Max WS | 11.05 | 91.01 | 94.17 | | 94.21 | 0.8 | 205.21 | | 0.16 |
| Carp | 43223 | Max WS | 11.09 | 91.91 | 94.18 | | 94.18 | 0.18 | 185.34 | | 0.04 |
| Carp | 43173 | Max WS | 11.02 | 92.2 | 94.18 | | 94.18 | 0.14 | 226.15 | | 0.03 |
| Carp | 43072 | Max WS | 23.86 | 92.12 | 94.16 | | 94.16 | 0.35 | 246.15 | | 0.08 |
| Carp | 42890 | Max WS | 24.37 | 91.68 | 94.1 | 92.64 | 94.12 | 0.66 | 92.93 | | 0.15 |
| Carp | 42885 | Palladium Driv Bridge | | | | | | | | | |
| Carp | 42855 | Max WS | 24.34 | 91.57 | 94.08 | | 94.1 | 0.66 | 170.78 | | 0.15 |
| Carp | 42686 | Max WS | 24.35 | 91.9 | 94.06 | | 94.06 | 0.33 | 131.16 | | 0.08 |
| Carp | 42558 | Max WS | 24.36 | 91.83 | 94.03 | | 94.03 | 0.46 | 134.38 | | 0.12 |
| Carp | 42410 | Max WS | 24.94 | 91.81 | 93.99 | | 93.99 | 0.45 | 124.94 | | 0.1 |
| Carp | 42212 | Max WS | 24.94 | 91.76 | 93.96 | | 93.97 | 0.22 | 145.9 | | 0.05 |
| Carp | 42182 | Max WS | 24.95 | 91.51 | 93.93 | 92.9 | 93.98 | 1.12 | 160.53 | | 0.26 |
| Carp | 42172 | Highway 417 S Bridge | | | | | | | | | |
| Carp | 42154 | Max WS | 24.95 | 91.24 | 93.89 | | 93.94 | 1.09 | 151.6 | | 0.25 |
| Carp | 42134 | Max WS | 24.95 | 91.88 | 93.86 | | 93.92 | 1.19 | 143.86 | | 0.29 |
| Carp | 42124 | Max WS | 24.95 | 91.36 | 93.85 | 92.84 | 93.9 | 1.15 | 138.07 | | 0.26 |
| Carp | 42119 | Highway 417 N Bridge | | | | | | | | | |
| Carp | 42097 | Max WS | 24.94 | 91.68 | 93.78 | | 93.86 | 1.26 | 79.92 | | 0.3 |
| Carp | 42075 | Max WS | 24.94 | 91.46 | 93.81 | | 93.82 | 0.4 | 172.22 | | 0.09 |
| Carp | 42002 | Max WS | 24.94 | 91.4 | 93.8 | | 93.81 | 0.33 | 125.04 | | 0.08 |
| Carp | 41896 | Max WS | 25.04 | 91.77 | 93.78 | | 93.79 | 0.33 | 103.68 | | 0.08 |
| Carp | 41743 | Max WS | 25.02 | 91.43 | 93.77 | | 93.77 | 0.3 | 180.55 | | 0.07 |
| Carp | 41671 | Max WS | 25.02 | 91.18 | 93.74 | | 93.76 | 0.77 | 184.67 | | 0.18 |
| Carp | 41357 | Max WS | 30.95 | 91.46 | 93.35 | | 93.35 | 0.41 | 442.2 | | 0.11 |
| Carp | 41117 | Max WS | 30.51 | 91.45 | 93.29 | | 93.29 | 0.31 | 446.17 | | 0.09 |
| Carp | 40910 | Max WS | 30.55 | 91.38 | 93.26 | | 93.26 | 0.26 | 375.93 | | 0.07 |
| Carp | 40703 | Max WS | 30.59 | 91.65 | 93.23 | | 93.23 | 0.28 | 351.71 | | 0.08 |
| Carp | 40505 | Max WS | 31.13 | 91.07 | 93.19 | | 93.2 | 0.3 | 300.38 | | 0.08 |
| Carp | 40298 | Max WS | 31.08 | 91.02 | 93.17 | | 93.17 | 0.25 | 388.91 | | 0.06 |
| Carp | 40092 | Max WS | 31.19 | 91.22 | 93.13 | | 93.14 | 0.44 | 242.49 | | 0.12 |
| Carp | 40071 | Max WS | 31.33 | 91.13 | 93.05 | | 93.2 | 1.73 | 221.65 | | 0.44 |
| Carp | 40070 | Richardson Sic Culvert | | | | | | | | | |
| Carp | 40050 | Max WS | 31.33 | 91.04 | 93.05 | | 93.19 | 1.66 | 221.75 | | 0.41 |
| Carp | 39892 | Max WS | 31.5 | 91.02 | 93.06 | | 93.07 | 0.51 | 190.9 | | 0.14 |

| | | | | | | | | | | |
|------|---------|--------|--------|-------|-------|-------|-------|--------|--------|------|
| Carp | 39695 | Max WS | 31.5 | 91.29 | 92.99 | 93 | 0.65 | 191.02 | 0.18 | |
| Carp | 39202 | Max WS | 30.87 | 90.57 | 92.82 | 92.83 | 0.53 | 330.17 | 0.12 | |
| Carp | 38697 | Max WS | 30.67 | 90.07 | 92.78 | 92.78 | 0.2 | 404.42 | 0.04 | |
| Carp | 38236 | Max WS | 30.75 | 90.16 | 92.75 | 92.75 | 0.35 | 357.79 | 0.07 | |
| Carp | 37894 | Max WS | 42.38 | 90.03 | 92.72 | 92.72 | 0.35 | 363.08 | 0.08 | |
| Carp | 37380.3 | Max WS | 42.02 | 89.67 | 92.66 | 91.27 | 92.77 | 1.47 | 384.37 | 0.3 |
| Carp | 37370 | Bridge | | | | | | | | |
| Carp | 37355.3 | Max WS | 40.96 | 89.66 | 92.57 | 92.68 | 1.48 | 366.51 | 0.3 | |
| Carp | 37101 | Max WS | 41.31 | 89.48 | 92.59 | 92.59 | 0.27 | 351.25 | 0.05 | |
| Carp | 36580 | Max WS | 41.14 | 89.1 | 92.58 | 92.58 | 0.22 | 401.9 | 0.04 | |
| Carp | 35288 | Max WS | 41.06 | 89.05 | 92.52 | 92.52 | 0.46 | 309.14 | 0.09 | |
| Carp | 35073 | Max WS | 41.05 | 89.27 | 92.5 | 92.5 | 0.5 | 179.21 | 0.1 | |
| Carp | 34555 | Max WS | 41.04 | 89.06 | 92.43 | 92.44 | 0.65 | 145.31 | 0.12 | |
| Carp | 33472 | Max WS | 41.08 | 88.54 | 92.35 | 92.35 | 0.34 | 253.97 | 0.06 | |
| Carp | 33201 | Max WS | 41.79 | 89.15 | 92.32 | 90.37 | 92.36 | 0.82 | 310.74 | 0.16 |
| Carp | 33197 | Bridge | | | | | | | | |
| Carp | 33181.1 | Max WS | 41.79 | 89.16 | 92.31 | 92.34 | 0.82 | 308.97 | 0.16 | |
| Carp | 32609 | Max WS | 41.77 | 89.56 | 92.3 | 92.3 | 0.26 | 344.08 | 0.05 | |
| Carp | 32096 | Max WS | 41.75 | 88.9 | 92.29 | 92.29 | 0.22 | 367.16 | 0.04 | |
| Carp | 31662 | Max WS | 41.36 | 88.74 | 92.26 | 90.02 | 92.28 | 0.69 | 143.11 | 0.12 |
| Carp | 31658 | Bridge | | | | | | | | |
| Carp | 31642.1 | Max WS | 40.34 | 88.75 | 92.26 | 92.28 | 0.69 | 139.34 | 0.12 | |
| Carp | 31414 | Max WS | -67.12 | 88.89 | 92.25 | 90.85 | 92.26 | -0.59 | 197.43 | 0.11 |

Existing 100 year with Starting Water Elevation Condition

HEC-RAS Plan: E100MnHtTc River: Carp River Reach: Carp Profile: Max WS

| Reach | River Sta | Profile | Q Total (m3/s) | Min Ch El (m) | W.S. Elev (m) | Crit W.S. (m) | E.G. Elev (m) | Vel Chnl (m/s) | Top Width (m) | Froude # | Chl |
|-------|-----------|----------------|-------------------|------------------|------------------|------------------|------------------|-------------------|------------------|----------|------|
| Carp | 44953 | Max WS | 9.28 | 92.75 | 94.79 | | 94.79 | 0.17 | 170.18 | | 0.04 |
| Carp | 44890 | Max WS | 9.27 | 92.63 | 94.79 | | 94.79 | 0.18 | 203.35 | | 0.05 |
| Carp | 44751 | Max WS | 9.26 | 92.38 | 94.78 | | 94.78 | 0.21 | 182.45 | | 0.05 |
| Carp | 44548 | Max WS | 12.66 | 92.43 | 94.77 | | 94.77 | 0.15 | 129.2 | | 0.03 |
| Carp | 44325 | Max WS | 12.96 | 92.11 | 94.75 | | 94.79 | 0.94 | 251.2 | | 0.2 |
| Carp | 44324 | Hazeldean Cul | | | | | | | | | |
| Carp | 44302 | Max WS | 12.96 | 92.6 | 94.43 | | 94.5 | 1.16 | 122.16 | | 0.27 |
| Carp | 44215 | Max WS | 12.96 | 92.7 | 94.45 | | 94.45 | 0.23 | 133.72 | | 0.05 |
| Carp | 44153 | Max WS | 12.95 | 92 | 94.45 | | 94.45 | 0.21 | 134.38 | | 0.05 |
| Carp | 43966 | Max WS | 12.95 | 91.99 | 94.44 | | 94.44 | 0.14 | 225.89 | | 0.03 |
| Carp | 43764 | Max WS | 13.98 | 92.3 | 94.44 | | 94.44 | 0.13 | 226.59 | | 0.03 |
| Carp | 43582 | Max WS | 14.12 | 92.34 | 94.43 | | 94.43 | 0.15 | 212.56 | | 0.03 |
| Carp | 43375 | Max WS | 14 | 91.62 | 94.37 | | 94.43 | 1.05 | 146.01 | | 0.22 |
| Carp | 43370 | Maple Grove C | | | | | | | | | |
| Carp | 43364 | Max WS | 14 | 91.01 | 94.36 | | 94.41 | 0.94 | 239 | | 0.18 |
| Carp | 43223 | Max WS | 13.98 | 91.91 | 94.37 | | 94.37 | 0.18 | 203.87 | | 0.04 |
| Carp | 43173 | Max WS | 13.98 | 92.2 | 94.37 | | 94.37 | 0.15 | 297.6 | | 0.03 |
| Carp | 43072 | Max WS | 31.67 | 92.12 | 94.36 | | 94.36 | 0.35 | 284.13 | | 0.08 |
| Carp | 42890 | Max WS | 32.3 | 91.68 | 94.29 | 92.76 | 94.32 | 0.81 | 138.52 | | 0.17 |
| Carp | 42885 | Palladium Driv | | | | | | | | | |
| Carp | 42855 | Max WS | 32.3 | 91.57 | 94.26 | | 94.29 | 0.81 | 173.87 | | 0.17 |
| Carp | 42686 | Max WS | 32.3 | 91.9 | 94.25 | | 94.25 | 0.37 | 139.63 | | 0.08 |
| Carp | 42558 | Max WS | 32.29 | 91.83 | 94.21 | | 94.22 | 0.48 | 147.55 | | 0.12 |
| Carp | 42410 | Max WS | 33.06 | 91.81 | 94.17 | | 94.17 | 0.51 | 154.9 | | 0.11 |

| | | | | | | | | | | |
|------|---------|------------------------|--------|-------|-------|-------|-------|-------|--------|------|
| Carp | 42212 | Max WS | 33.07 | 91.76 | 94.14 | | 94.14 | 0.26 | 164.8 | 0.06 |
| Carp | 42182 | Max WS | 33.07 | 91.51 | 94.09 | 93.12 | 94.17 | 1.34 | 209.94 | 0.3 |
| Carp | 42172 | Highway 417 S Bridge | | | | | | | | |
| Carp | 42154 | Max WS | 33.07 | 91.24 | 94.04 | | 94.12 | 1.32 | 181.88 | 0.29 |
| Carp | 42134 | Max WS | 33.06 | 91.88 | 94.01 | | 94.1 | 1.41 | 176.5 | 0.33 |
| Carp | 42124 | Max WS | 33.06 | 91.36 | 93.99 | 93.06 | 94.07 | 1.39 | 171.51 | 0.31 |
| Carp | 42119 | Highway 417 N Bridge | | | | | | | | |
| Carp | 42097 | Max WS | 33.05 | 91.68 | 93.9 | | 94.01 | 1.55 | 102.23 | 0.36 |
| Carp | 42075 | Max WS | 33.07 | 91.46 | 93.94 | | 93.95 | 0.44 | 183.88 | 0.1 |
| Carp | 42002 | Max WS | 33.07 | 91.4 | 93.93 | | 93.93 | 0.39 | 132.03 | 0.09 |
| Carp | 41896 | Max WS | 33.18 | 91.77 | 93.91 | | 93.91 | 0.39 | 105.53 | 0.09 |
| Carp | 41743 | Max WS | 33.19 | 91.43 | 93.88 | | 93.89 | 0.35 | 193.88 | 0.08 |
| Carp | 41671 | Max WS | 33.16 | 91.18 | 93.86 | | 93.87 | 0.87 | 252.9 | 0.2 |
| Carp | 41357 | Max WS | 40.84 | 91.46 | 93.5 | | 93.51 | 0.38 | 513.96 | 0.1 |
| Carp | 41117 | Max WS | 40.45 | 91.45 | 93.46 | | 93.46 | 0.28 | 455.82 | 0.07 |
| Carp | 40910 | Max WS | 40.63 | 91.38 | 93.44 | | 93.44 | 0.25 | 401.06 | 0.07 |
| Carp | 40703 | Max WS | 40.65 | 91.65 | 93.42 | | 93.42 | 0.27 | 376.39 | 0.08 |
| Carp | 40505 | Max WS | 41.21 | 91.07 | 93.39 | | 93.39 | 0.3 | 324.53 | 0.08 |
| Carp | 40298 | Max WS | 41.11 | 91.02 | 93.37 | | 93.37 | 0.24 | 406.74 | 0.06 |
| Carp | 40092 | Max WS | 41.17 | 91.22 | 93.34 | | 93.34 | 0.43 | 282.31 | 0.11 |
| Carp | 40071 | Max WS | 40.85 | 91.13 | 93.24 | | 93.45 | 2.01 | 232.75 | 0.48 |
| Carp | 40070 | Richardson Sic Culvert | | | | | | | | |
| Carp | 40050 | Max WS | 40.71 | 91.04 | 93.23 | | 93.43 | 1.94 | 223.76 | 0.45 |
| Carp | 39892 | Max WS | 41.21 | 91.02 | 93.26 | | 93.27 | 0.51 | 248.77 | 0.13 |
| Carp | 39695 | Max WS | 40.9 | 91.29 | 93.21 | | 93.22 | 0.58 | 225.07 | 0.15 |
| Carp | 39202 | Max WS | 40.28 | 90.57 | 93.12 | | 93.13 | 0.39 | 366.06 | 0.08 |
| Carp | 38697 | Max WS | 40.14 | 90.07 | 93.1 | | 93.1 | 0.17 | 448.85 | 0.04 |
| Carp | 38236 | Max WS | 40.22 | 90.16 | 93.09 | | 93.09 | 0.27 | 393.85 | 0.05 |
| Carp | 37894 | Max WS | 56.78 | 90.03 | 93.07 | | 93.07 | 0.32 | 397.58 | 0.06 |
| Carp | 37380.3 | Max WS | 56.63 | 89.67 | 93.01 | 91.51 | 93.16 | 1.74 | 444.82 | 0.33 |
| Carp | 37370 | Bridge | | | | | | | | |
| Carp | 37355.3 | Max WS | 55.45 | 89.66 | 92.83 | | 93 | 1.82 | 419.47 | 0.35 |
| Carp | 37101 | Max WS | 55.82 | 89.48 | 92.86 | | 92.86 | 0.29 | 421.26 | 0.05 |
| Carp | 36580 | Max WS | 55.71 | 89.1 | 92.84 | | 92.85 | 0.23 | 411.6 | 0.04 |
| Carp | 35288 | Max WS | 55.59 | 89.05 | 92.8 | | 92.8 | 0.44 | 341.98 | 0.08 |
| Carp | 35073 | Max WS | 55.59 | 89.27 | 92.77 | | 92.78 | 0.57 | 253.35 | 0.1 |
| Carp | 34555 | Max WS | 55.57 | 89.06 | 92.7 | | 92.71 | 0.73 | 190.73 | 0.13 |
| Carp | 33472 | Max WS | 55.62 | 88.54 | 92.62 | | 92.62 | 0.37 | 279.76 | 0.06 |
| Carp | 33201 | Max WS | 56.61 | 89.15 | 92.58 | 90.57 | 92.63 | 1 | 361.09 | 0.18 |
| Carp | 33197 | Bridge | | | | | | | | |
| Carp | 33181.1 | Max WS | 56.61 | 89.16 | 92.56 | | 92.61 | 1.01 | 359.85 | 0.19 |
| Carp | 32609 | Max WS | 56.61 | 89.56 | 92.56 | | 92.56 | 0.28 | 378.56 | 0.05 |
| Carp | 32096 | Max WS | 56.56 | 88.9 | 92.55 | | 92.55 | 0.24 | 390.4 | 0.04 |
| Carp | 31662 | Max WS | 55.54 | 88.74 | 92.51 | 90.26 | 92.54 | 0.85 | 152.47 | 0.14 |
| Carp | 31658 | Bridge | | | | | | | | |
| Carp | 31642.1 | Max WS | 50.3 | 88.75 | 92.51 | | 92.53 | 0.78 | 207.07 | 0.13 |
| Carp | 31414 | Max WS | -82.69 | 88.89 | 92.5 | 90.94 | 92.51 | -0.61 | 247.33 | 0.11 |

Existing Condition with Normal Depth Condition

Existing 2 year with Normal Depth Condition

HEC-RAS Plan: E2MnHtTcND River: Carp River Reach: Carp Profile: Max WS

| Reach | River Sta | Profile | Q Total (m3/s) | Min Ch El (m) | W.S. Elev (m) | Crit W.S. (m) | E.G. Elev (m) | Vel Chnl (m/s) | Top Width (m) | Froude # | Chl |
|-------|-----------|------------------------|-------------------|------------------|------------------|------------------|------------------|-------------------|------------------|----------|------|
| Carp | 44953 | Max WS | 3.55 | 92.75 | 93.93 | | 93.93 | 0.26 | 35.16 | | 0.09 |
| Carp | 44890 | Max WS | 3.54 | 92.63 | 93.9 | | 93.91 | 0.4 | 50.19 | | 0.15 |
| Carp | 44751 | Max WS | 3.51 | 92.38 | 93.86 | | 93.87 | 0.3 | 15.6 | | 0.09 |
| Carp | 44548 | Max WS | 4.47 | 92.43 | 93.82 | | 93.82 | 0.2 | 96.02 | | 0.06 |
| Carp | 44325 | Max WS | 4.59 | 92.11 | 93.77 | | 93.79 | 0.58 | 45.89 | | 0.16 |
| Carp | 44324 | Hazeldean Cul Culvert | | | | | | | | | |
| Carp | 44302 | Max WS | 4.5 | 92.6 | 93.74 | | 93.76 | 0.65 | 68.83 | | 0.19 |
| Carp | 44215 | Max WS | 4.5 | 92.7 | 93.73 | | 93.74 | 0.24 | 84.99 | | 0.08 |
| Carp | 44153 | Max WS | 4.5 | 92 | 93.73 | | 93.73 | 0.21 | 93.44 | | 0.06 |
| Carp | 43966 | Max WS | 4.48 | 91.99 | 93.72 | | 93.72 | 0.12 | 118.46 | | 0.03 |
| Carp | 43764 | Max WS | 4.85 | 92.3 | 93.71 | | 93.71 | 0.12 | 134.17 | | 0.03 |
| Carp | 43582 | Max WS | 4.9 | 92.34 | 93.71 | | 93.71 | 0.14 | 128.85 | | 0.04 |
| Carp | 43375 | Max WS | 4.96 | 91.62 | 93.66 | | 93.67 | 0.54 | 8.48 | | 0.13 |
| Carp | 43370 | Maple Grove C Culvert | | | | | | | | | |
| Carp | 43364 | Max WS | 4.96 | 91.01 | 93.66 | | 93.67 | 0.45 | 49.14 | | 0.1 |
| Carp | 43223 | Max WS | 4.96 | 91.91 | 93.65 | | 93.65 | 0.19 | 108.32 | | 0.05 |
| Carp | 43173 | Max WS | 4.95 | 92.2 | 93.64 | | 93.64 | 0.14 | 146.87 | | 0.04 |
| Carp | 43072 | Max WS | 9.29 | 92.12 | 93.63 | | 93.63 | 0.3 | 114.27 | | 0.09 |
| Carp | 42890 | Max WS | 9.52 | 91.68 | 93.59 | 92.33 | 93.6 | 0.35 | 69.29 | | 0.09 |
| Carp | 42885 | Palladium Driv Bridge | | | | | | | | | |
| Carp | 42855 | Max WS | 9.51 | 91.57 | 93.58 | | 93.59 | 0.34 | 138.97 | | 0.09 |
| Carp | 42686 | Max WS | 9.52 | 91.9 | 93.56 | | 93.56 | 0.23 | 113 | | 0.06 |
| Carp | 42558 | Max WS | 9.53 | 91.83 | 93.53 | | 93.54 | 0.31 | 60.87 | | 0.1 |
| Carp | 42410 | Max WS | 9.84 | 91.81 | 93.5 | | 93.51 | 0.29 | 81.55 | | 0.08 |
| Carp | 42212 | Max WS | 9.86 | 91.76 | 93.49 | | 93.49 | 0.13 | 117.04 | | 0.03 |
| Carp | 42182 | Max WS | 9.86 | 91.51 | 93.48 | 92.48 | 93.49 | 0.62 | 54.84 | | 0.16 |
| Carp | 42172 | Highway 417 S Bridge | | | | | | | | | |
| Carp | 42154 | Max WS | 9.86 | 91.24 | 93.46 | | 93.48 | 0.58 | 52.39 | | 0.15 |
| Carp | 42134 | Max WS | 9.86 | 91.88 | 93.45 | | 93.47 | 0.68 | 50.35 | | 0.19 |
| Carp | 42124 | Max WS | 9.86 | 91.36 | 93.44 | 92.39 | 93.46 | 0.61 | 49.55 | | 0.16 |
| Carp | 42119 | Highway 417 N Bridge | | | | | | | | | |
| Carp | 42097 | Max WS | 9.86 | 91.68 | 93.42 | | 93.44 | 0.66 | 18.32 | | 0.18 |
| Carp | 42075 | Max WS | 9.87 | 91.46 | 93.42 | | 93.43 | 0.24 | 96.08 | | 0.06 |
| Carp | 42002 | Max WS | 9.87 | 91.4 | 93.42 | | 93.42 | 0.2 | 98.11 | | 0.05 |
| Carp | 41896 | Max WS | 9.91 | 91.77 | 93.41 | | 93.41 | 0.2 | 98.01 | | 0.05 |
| Carp | 41743 | Max WS | 9.92 | 91.43 | 93.4 | | 93.4 | 0.18 | 145.29 | | 0.05 |
| Carp | 41671 | Max WS | 9.92 | 91.18 | 93.38 | | 93.39 | 0.67 | 106.76 | | 0.17 |
| Carp | 41357 | Max WS | 11.72 | 91.46 | 93.04 | | 93.04 | 0.36 | 286.8 | | 0.11 |
| Carp | 41117 | Max WS | 11.6 | 91.45 | 92.93 | | 92.93 | 0.4 | 359.67 | | 0.13 |
| Carp | 40910 | Max WS | 11.48 | 91.38 | 92.87 | | 92.87 | 0.25 | 308.38 | | 0.08 |
| Carp | 40703 | Max WS | 11.46 | 91.65 | 92.82 | | 92.82 | 0.33 | 292.3 | | 0.12 |
| Carp | 40505 | Max WS | 11.61 | 91.07 | 92.76 | | 92.76 | 0.27 | 219.23 | | 0.09 |
| Carp | 40298 | Max WS | 11.59 | 91.02 | 92.72 | | 92.72 | 0.24 | 296.93 | | 0.07 |
| Carp | 40092 | Max WS | 11.71 | 91.22 | 92.67 | | 92.68 | 0.4 | 165.11 | | 0.13 |
| Carp | 40071 | Max WS | 11.85 | 91.13 | 92.64 | | 92.68 | 0.88 | 159.31 | | 0.26 |
| Carp | 40070 | Richardson Sic Culvert | | | | | | | | | |

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|------|---------|--------|--------|-------|-------|-------|-------|------|--------|------|
| Carp | 40050 | Max WS | 11.85 | 91.04 | 92.64 | | 92.68 | 0.83 | 170.11 | 0.24 |
| Carp | 39892 | Max WS | 11.96 | 91.02 | 92.62 | | 92.62 | 0.36 | 77.57 | 0.11 |
| Carp | 39695 | Max WS | 12.09 | 91.29 | 92.53 | | 92.54 | 0.6 | 64.22 | 0.21 |
| Carp | 39202 | Max WS | 12.01 | 90.57 | 92.31 | | 92.32 | 0.53 | 66.41 | 0.13 |
| Carp | 38697 | Max WS | 11.93 | 90.07 | 92.18 | | 92.18 | 0.23 | 272.71 | 0.06 |
| Carp | 38236 | Max WS | 11.92 | 90.16 | 92.08 | | 92.1 | 0.65 | 194.55 | 0.17 |
| Carp | 37894 | Max WS | 16.1 | 90.03 | 91.9 | | 91.91 | 0.56 | 121.91 | 0.15 |
| Carp | 37380.3 | Max WS | 15.51 | 89.67 | 91.76 | 90.66 | 91.8 | 0.84 | 228.85 | 0.21 |
| Carp | 37370 | | Bridge | | | | | | | |
| Carp | 37355.3 | Max WS | 15.27 | 89.66 | 91.72 | | 91.76 | 0.85 | 223.44 | 0.22 |
| Carp | 37101 | Max WS | 15.12 | 89.48 | 91.71 | | 91.71 | 0.33 | 240.42 | 0.08 |
| Carp | 36580 | Max WS | 14.87 | 89.1 | 91.66 | | 91.66 | 0.37 | 313.7 | 0.08 |
| Carp | 35288 | Max WS | 14.65 | 89.05 | 91.44 | | 91.46 | 0.58 | 79.14 | 0.13 |
| Carp | 35073 | Max WS | 14.63 | 89.27 | 91.41 | | 91.41 | 0.43 | 66.89 | 0.1 |
| Carp | 34555 | Max WS | 14.6 | 89.06 | 91.32 | | 91.33 | 0.53 | 30.12 | 0.12 |
| Carp | 33472 | Max WS | 14.61 | 88.54 | 91.22 | | 91.23 | 0.27 | 69.58 | 0.05 |
| Carp | 33201 | Max WS | 14.83 | 89.15 | 91.19 | 89.86 | 91.2 | 0.51 | 23.6 | 0.13 |
| Carp | 33197 | | Bridge | | | | | | | |
| Carp | 33181.1 | Max WS | 14.83 | 89.16 | 91.17 | | 91.19 | 0.52 | 24.32 | 0.13 |
| Carp | 32609 | Max WS | 14.8 | 89.56 | 91.03 | | 91.04 | 0.52 | 90.06 | 0.14 |
| Carp | 32096 | Max WS | 14.79 | 88.9 | 90.87 | | 90.89 | 0.57 | 130.28 | 0.15 |
| Carp | 31662 | Max WS | 14.85 | 88.74 | 90.76 | 89.49 | 90.77 | 0.53 | 76.78 | 0.13 |
| Carp | 31658 | | Bridge | | | | | | | |
| Carp | 31642.1 | Max WS | 14.85 | 88.75 | 90.75 | | 90.77 | 0.56 | 75.58 | 0.13 |
| Carp | 31414 | Max WS | 15.9 | 88.89 | 90.6 | 89.84 | 90.64 | 0.94 | 66.69 | 0.26 |

Existing 5 year with Normal Depth Condition

HEC-RAS Plan: E5MnHtTcND River: Carp River Reach: Carp Profile: Max WS

| Reach | River Sta | Profile | Q Total (m ³ /s) | Min Ch El (m) | W.S. Elev (m) | Crit W.S. (m) | E.G. Elev (m) | Vel Chnl (m/s) | Top Width (m) | Froude # | Chl |
|-------|-----------|---------|--------------------------------|------------------|------------------|------------------|------------------|-------------------|------------------|----------|------|
| Carp | 44953 | Max WS | 5.26 | 92.75 | 94.18 | | 94.18 | 0.27 | 59.26 | | 0.08 |
| Carp | 44890 | Max WS | 5.23 | 92.63 | 94.16 | | 94.17 | 0.33 | 94.94 | | 0.1 |
| Carp | 44751 | Max WS | 5.2 | 92.38 | 94.13 | | 94.14 | 0.34 | 90.6 | | 0.09 |
| Carp | 44548 | Max WS | 6.8 | 92.43 | 94.1 | | 94.1 | 0.18 | 109.98 | | 0.05 |
| Carp | 44325 | Max WS | 6.98 | 92.11 | 94.06 | | 94.08 | 0.73 | 92.63 | | 0.18 |
| Carp | 44324 | | Hazeldean Cul | | | | | | | | |
| Carp | 44302 | Max WS | 6.88 | 92.6 | 93.97 | | 94 | 0.82 | 86.92 | | 0.23 |
| Carp | 44215 | Max WS | 6.88 | 92.7 | 93.97 | | 93.97 | 0.23 | 102.49 | | 0.07 |
| Carp | 44153 | Max WS | 6.88 | 92 | 93.97 | | 93.97 | 0.21 | 109.51 | | 0.05 |
| Carp | 43966 | Max WS | 6.86 | 91.99 | 93.96 | | 93.96 | 0.13 | 140.13 | | 0.03 |
| Carp | 43764 | Max WS | 7.38 | 92.3 | 93.96 | | 93.96 | 0.13 | 175.36 | | 0.03 |
| Carp | 43582 | Max WS | 7.46 | 92.34 | 93.95 | | 93.95 | 0.14 | 153.83 | | 0.04 |
| Carp | 43375 | Max WS | 7.53 | 91.62 | 93.88 | | 93.91 | 0.72 | 8.62 | | 0.17 |
| Carp | 43370 | | Maple Grove C | | | | | | | | |
| Carp | 43364 | Max WS | 7.53 | 91.01 | 93.89 | | 93.91 | 0.61 | 102.2 | | 0.13 |
| Carp | 43223 | Max WS | 7.52 | 91.91 | 93.88 | | 93.88 | 0.19 | 145.97 | | 0.05 |
| Carp | 43173 | Max WS | 7.52 | 92.2 | 93.88 | | 93.88 | 0.14 | 164.35 | | 0.04 |
| Carp | 43072 | Max WS | 14.84 | 92.12 | 93.86 | | 93.86 | 0.33 | 160.86 | | 0.09 |
| Carp | 42890 | Max WS | 15.15 | 91.68 | 93.81 | 92.47 | 93.82 | 0.48 | 79.66 | | 0.12 |
| Carp | 42885 | | Palladium Driv | | | | | | | | |
| Carp | 42855 | Max WS | 15.13 | 91.57 | 93.8 | | 93.81 | 0.48 | 153.81 | | 0.11 |
| Carp | 42686 | Max WS | 15.14 | 91.9 | 93.78 | | 93.78 | 0.28 | 119 | | 0.07 |

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|------|---------|----------------|---------|-------|-------|-------|-------|--------|--------|------|
| Carp | 42558 | Max WS | 15.15 | 91.83 | 93.75 | 93.75 | 0.37 | 89.27 | 0.11 | |
| Carp | 42410 | Max WS | 15.5 | 91.81 | 93.71 | 93.72 | 0.36 | 90.77 | 0.09 | |
| Carp | 42212 | Max WS | 15.51 | 91.76 | 93.7 | 93.7 | 0.17 | 129.08 | 0.04 | |
| Carp | 42182 | Max WS | 15.51 | 91.51 | 93.67 | 92.66 | 93.7 | 0.83 | 89.18 | 0.21 |
| Carp | 42172 | Highway 417 S | Bridge | | | | | | | |
| Carp | 42154 | Max WS | 15.51 | 91.24 | 93.65 | 93.68 | 0.79 | 84.89 | 0.19 | |
| Carp | 42134 | Max WS | 15.51 | 91.88 | 93.63 | 93.66 | 0.9 | 81.7 | 0.24 | |
| Carp | 42124 | Max WS | 15.51 | 91.36 | 93.62 | 92.58 | 93.65 | 0.83 | 79.94 | 0.2 |
| Carp | 42119 | Highway 417 N | Bridge | | | | | | | |
| Carp | 42097 | Max WS | 15.52 | 91.68 | 93.58 | 93.62 | 0.91 | 23.67 | 0.23 | |
| Carp | 42075 | Max WS | 15.52 | 91.46 | 93.59 | 93.6 | 0.37 | 160.27 | 0.09 | |
| Carp | 42002 | Max WS | 15.52 | 91.4 | 93.59 | 93.59 | 0.26 | 111.83 | 0.06 | |
| Carp | 41896 | Max WS | 15.58 | 91.77 | 93.57 | 93.57 | 0.25 | 100.48 | 0.06 | |
| Carp | 41743 | Max WS | 15.59 | 91.43 | 93.56 | 93.56 | 0.23 | 160.08 | 0.06 | |
| Carp | 41671 | Max WS | 15.59 | 91.18 | 93.54 | 93.55 | 0.72 | 115.53 | 0.17 | |
| Carp | 41357 | Max WS | 18.77 | 91.46 | 93.16 | 93.16 | 0.39 | 315.08 | 0.11 | |
| Carp | 41117 | Max WS | 18.47 | 91.45 | 93.07 | 93.07 | 0.35 | 403.03 | 0.11 | |
| Carp | 40910 | Max WS | 18.34 | 91.38 | 93.03 | 93.03 | 0.25 | 344.35 | 0.08 | |
| Carp | 40703 | Max WS | 18.33 | 91.65 | 92.99 | 92.99 | 0.29 | 319.25 | 0.1 | |
| Carp | 40505 | Max WS | 18.64 | 91.07 | 92.95 | 92.95 | 0.27 | 256.97 | 0.08 | |
| Carp | 40298 | Max WS | 18.59 | 91.02 | 92.92 | 92.92 | 0.24 | 362.73 | 0.07 | |
| Carp | 40092 | Max WS | 18.72 | 91.22 | 92.88 | 92.88 | 0.4 | 185.76 | 0.12 | |
| Carp | 40071 | Max WS | 18.89 | 91.13 | 92.83 | 92.9 | 1.21 | 195.12 | 0.33 | |
| Carp | 40070 | Richardson Sic | Culvert | | | | | | | |
| Carp | 40050 | Max WS | 18.89 | 91.04 | 92.83 | 92.9 | 1.15 | 202.84 | 0.3 | |
| Carp | 39892 | Max WS | 19.01 | 91.02 | 92.82 | 92.83 | 0.44 | 146.61 | 0.13 | |
| Carp | 39695 | Max WS | 19.11 | 91.29 | 92.73 | 92.75 | 0.67 | 143.36 | 0.21 | |
| Carp | 39202 | Max WS | 18.98 | 90.57 | 92.48 | 92.51 | 0.76 | 207.93 | 0.18 | |
| Carp | 38697 | Max WS | 18.91 | 90.07 | 92.36 | 92.36 | 0.24 | 311.23 | 0.06 | |
| Carp | 38236 | Max WS | 18.94 | 90.16 | 92.28 | 92.3 | 0.61 | 267.92 | 0.15 | |
| Carp | 37894 | Max WS | 25.24 | 90.03 | 92.16 | 92.17 | 0.59 | 291.56 | 0.15 | |
| Carp | 37380.3 | Max WS | 24.17 | 89.67 | 92.03 | 90.9 | 92.1 | 1.13 | 270.68 | 0.26 |
| Carp | 37370 | Bridge | | | | | | | | |
| Carp | 37355.3 | Max WS | 23.41 | 89.66 | 91.97 | 92.04 | 1.13 | 249.77 | 0.26 | |
| Carp | 37101 | Max WS | 23.51 | 89.48 | 91.98 | 91.98 | 0.32 | 263.46 | 0.07 | |
| Carp | 36580 | Max WS | 23.15 | 89.1 | 91.94 | 91.94 | 0.31 | 360.1 | 0.07 | |
| Carp | 35288 | Max WS | 22.86 | 89.05 | 91.77 | 91.78 | 0.63 | 130.32 | 0.13 | |
| Carp | 35073 | Max WS | 22.83 | 89.27 | 91.73 | 91.74 | 0.51 | 87.57 | 0.11 | |
| Carp | 34555 | Max WS | 22.76 | 89.06 | 91.61 | 91.63 | 0.68 | 64.05 | 0.15 | |
| Carp | 33472 | Max WS | 22.73 | 88.54 | 91.48 | 91.49 | 0.36 | 137.2 | 0.07 | |
| Carp | 33201 | Max WS | 22.97 | 89.15 | 91.43 | 90.04 | 91.45 | 0.68 | 122.75 | 0.16 |
| Carp | 33197 | Bridge | | | | | | | | |
| Carp | 33181.1 | Max WS | 22.97 | 89.16 | 91.41 | 91.44 | 0.69 | 122.17 | 0.16 | |
| Carp | 32609 | Max WS | 22.93 | 89.56 | 91.25 | 91.26 | 0.6 | 155.59 | 0.15 | |
| Carp | 32096 | Max WS | 22.91 | 88.9 | 91.1 | 91.11 | 0.58 | 171.04 | 0.14 | |
| Carp | 31662 | Max WS | 22.97 | 88.74 | 90.98 | 89.67 | 91 | 0.71 | 90.46 | 0.16 |
| Carp | 31658 | Bridge | | | | | | | | |
| Carp | 31642.1 | Max WS | 22.97 | 88.75 | 90.97 | 90.99 | 0.74 | 90.3 | 0.17 | |
| Carp | 31414 | Max WS | 24.55 | 88.89 | 90.81 | 90.07 | 90.85 | 1.04 | 86.31 | 0.27 |

Existing 25 year with Normal Depth Condition

HEC-RAS Plan: E25MnHtTcND River: Carp River Reach: Carp Profile: Max WS

| Reach | River Sta | Profile | Q Total (m3/s) | Min Ch El (m) | W.S. Elev (m) | Crit W.S. (m) | E.G. Elev (m) | Vel Chnl (m/s) | Top Width (m) | Froude # | Chl |
|-------|-----------|------------------------|-------------------|------------------|------------------|------------------|------------------|-------------------|------------------|----------|------|
| Carp | 44953 | Max WS | 7.43 | 92.75 | 94.5 | | 94.5 | 0.22 | 156.92 | | 0.06 |
| Carp | 44890 | Max WS | 7.39 | 92.63 | 94.49 | | 94.49 | 0.23 | 138.88 | | 0.06 |
| Carp | 44751 | Max WS | 7.39 | 92.38 | 94.48 | | 94.48 | 0.27 | 126.19 | | 0.06 |
| Carp | 44548 | Max WS | 9.93 | 92.43 | 94.46 | | 94.47 | 0.16 | 121.45 | | 0.04 |
| Carp | 44325 | Max WS | 10.22 | 92.11 | 94.44 | | 94.47 | 0.86 | 173.99 | | 0.19 |
| Carp | 44324 | Hazeldean Cul Culvert | | | | | | | | | |
| Carp | 44302 | Max WS | 10.16 | 92.6 | 94.25 | | 94.3 | 1.01 | 106.37 | | 0.25 |
| Carp | 44215 | Max WS | 10.16 | 92.7 | 94.26 | | 94.26 | 0.22 | 120.24 | | 0.06 |
| Carp | 44153 | Max WS | 10.16 | 92 | 94.26 | | 94.26 | 0.21 | 127.02 | | 0.05 |
| Carp | 43966 | Max WS | 10.15 | 91.99 | 94.25 | | 94.25 | 0.13 | 196.43 | | 0.03 |
| Carp | 43764 | Max WS | 10.94 | 92.3 | 94.25 | | 94.25 | 0.13 | 211.5 | | 0.03 |
| Carp | 43582 | Max WS | 11.04 | 92.34 | 94.24 | | 94.24 | 0.15 | 192.82 | | 0.04 |
| Carp | 43375 | Max WS | 11.04 | 91.62 | 94.17 | | 94.21 | 0.91 | 60.91 | | 0.2 |
| Carp | 43370 | Maple Grove C Culvert | | | | | | | | | |
| Carp | 43364 | Max WS | 11.04 | 91.01 | 94.17 | | 94.21 | 0.79 | 205.16 | | 0.16 |
| Carp | 43223 | Max WS | 11.02 | 91.91 | 94.18 | | 94.18 | 0.18 | 185.34 | | 0.04 |
| Carp | 43173 | Max WS | 11.02 | 92.2 | 94.18 | | 94.18 | 0.14 | 226.15 | | 0.03 |
| Carp | 43072 | Max WS | 23.86 | 92.12 | 94.16 | | 94.16 | 0.35 | 246.15 | | 0.08 |
| Carp | 42890 | Max WS | 24.36 | 91.68 | 94.1 | 92.64 | 94.12 | 0.66 | 92.93 | | 0.15 |
| Carp | 42885 | Palladium Driv Bridge | | | | | | | | | |
| Carp | 42855 | Max WS | 24.34 | 91.57 | 94.08 | | 94.1 | 0.66 | 170.78 | | 0.15 |
| Carp | 42686 | Max WS | 24.35 | 91.9 | 94.06 | | 94.06 | 0.33 | 131.16 | | 0.08 |
| Carp | 42558 | Max WS | 24.36 | 91.83 | 94.03 | | 94.03 | 0.46 | 134.35 | | 0.12 |
| Carp | 42410 | Max WS | 24.94 | 91.81 | 93.99 | | 93.99 | 0.45 | 124.94 | | 0.1 |
| Carp | 42212 | Max WS | 24.95 | 91.76 | 93.96 | | 93.97 | 0.22 | 145.9 | | 0.05 |
| Carp | 42182 | Max WS | 24.95 | 91.51 | 93.93 | 92.9 | 93.98 | 1.12 | 160.47 | | 0.26 |
| Carp | 42172 | Highway 417 S Bridge | | | | | | | | | |
| Carp | 42154 | Max WS | 24.95 | 91.24 | 93.89 | | 93.94 | 1.09 | 151.6 | | 0.25 |
| Carp | 42134 | Max WS | 24.95 | 91.88 | 93.86 | | 93.92 | 1.19 | 143.76 | | 0.29 |
| Carp | 42124 | Max WS | 24.94 | 91.36 | 93.85 | 92.84 | 93.9 | 1.15 | 137.97 | | 0.26 |
| Carp | 42119 | Highway 417 N Bridge | | | | | | | | | |
| Carp | 42097 | Max WS | 24.94 | 91.68 | 93.78 | | 93.86 | 1.26 | 79.86 | | 0.3 |
| Carp | 42075 | Max WS | 24.94 | 91.46 | 93.81 | | 93.82 | 0.4 | 172.21 | | 0.09 |
| Carp | 42002 | Max WS | 24.95 | 91.4 | 93.8 | | 93.81 | 0.33 | 125.02 | | 0.08 |
| Carp | 41896 | Max WS | 25.05 | 91.77 | 93.78 | | 93.79 | 0.33 | 103.67 | | 0.08 |
| Carp | 41743 | Max WS | 25.03 | 91.43 | 93.77 | | 93.77 | 0.3 | 180.51 | | 0.07 |
| Carp | 41671 | Max WS | 25.03 | 91.18 | 93.74 | | 93.76 | 0.77 | 184.55 | | 0.18 |
| Carp | 41357 | Max WS | 31.06 | 91.46 | 93.34 | | 93.35 | 0.41 | 439.89 | | 0.11 |
| Carp | 41117 | Max WS | 30.64 | 91.45 | 93.28 | | 93.28 | 0.32 | 445.26 | | 0.09 |
| Carp | 40910 | Max WS | 30.67 | 91.38 | 93.25 | | 93.25 | 0.26 | 374.54 | | 0.07 |
| Carp | 40703 | Max WS | 30.71 | 91.65 | 93.22 | | 93.22 | 0.29 | 350.86 | | 0.09 |
| Carp | 40505 | Max WS | 31.29 | 91.07 | 93.18 | | 93.18 | 0.31 | 297.95 | | 0.09 |
| Carp | 40298 | Max WS | 31.25 | 91.02 | 93.15 | | 93.15 | 0.26 | 387.23 | | 0.07 |
| Carp | 40092 | Max WS | 31.39 | 91.22 | 93.11 | | 93.12 | 0.46 | 239.76 | | 0.12 |
| Carp | 40071 | Max WS | 31.63 | 91.13 | 93.02 | | 93.18 | 1.77 | 220.09 | | 0.45 |
| Carp | 40070 | Richardson Sic Culvert | | | | | | | | | |
| Carp | 40050 | Max WS | 31.58 | 91.04 | 93.03 | | 93.18 | 1.69 | 220.84 | | 0.42 |
| Carp | 39892 | Max WS | 31.74 | 91.02 | 93.04 | | 93.05 | 0.54 | 186.38 | | 0.14 |

| | | | | | | | | | | |
|------|---------|--------|-------|-------|-------|-------|-------|--------|--------|------|
| Carp | 39695 | Max WS | 31.78 | 91.29 | 92.95 | 92.97 | 0.71 | 185.2 | 0.2 | |
| Carp | 39202 | Max WS | 31.19 | 90.57 | 92.71 | 92.72 | 0.7 | 317.11 | 0.16 | |
| Carp | 38697 | Max WS | 30.83 | 90.07 | 92.62 | 92.62 | 0.25 | 384.01 | 0.06 | |
| Carp | 38236 | Max WS | 30.82 | 90.16 | 92.57 | 92.58 | 0.49 | 338.79 | 0.11 | |
| Carp | 37894 | Max WS | 41.43 | 90.03 | 92.5 | 92.51 | 0.48 | 347.41 | 0.11 | |
| Carp | 37380.3 | Max WS | 40.26 | 89.67 | 92.4 | 91.24 | 92.53 | 1.57 | 324.53 | 0.33 |
| Carp | 37370 | Bridge | | | | | | | | |
| Carp | 37355.3 | Max WS | 38.17 | 89.66 | 92.3 | 92.42 | 1.56 | 298.36 | 0.34 | |
| Carp | 37101 | Max WS | 38.66 | 89.48 | 92.32 | 92.32 | 0.32 | 303.02 | 0.07 | |
| Carp | 36580 | Max WS | 38.26 | 89.1 | 92.29 | 92.29 | 0.29 | 386.87 | 0.06 | |
| Carp | 35288 | Max WS | 37.81 | 89.05 | 92.15 | 92.17 | 0.66 | 207.84 | 0.13 | |
| Carp | 35073 | Max WS | 37.77 | 89.27 | 92.11 | 92.12 | 0.62 | 124.12 | 0.13 | |
| Carp | 34555 | Max WS | 37.65 | 89.06 | 91.97 | 92 | 0.88 | 97.91 | 0.17 | |
| Carp | 33472 | Max WS | 37.57 | 88.54 | 91.78 | 91.79 | 0.48 | 186.61 | 0.09 | |
| Carp | 33201 | Max WS | 37.94 | 89.15 | 91.71 | 90.31 | 91.76 | 0.98 | 206.55 | 0.21 |
| Carp | 33197 | Bridge | | | | | | | | |
| Carp | 33181.1 | Max WS | 37.91 | 89.16 | 91.68 | 91.73 | 1 | 199.56 | 0.22 | |
| Carp | 32609 | Max WS | 37.85 | 89.56 | 91.53 | 91.54 | 0.65 | 235.4 | 0.15 | |
| Carp | 32096 | Max WS | 37.83 | 88.9 | 91.4 | 91.41 | 0.6 | 236.09 | 0.14 | |
| Carp | 31662 | Max WS | 37.85 | 88.74 | 91.26 | 89.95 | 91.29 | 0.99 | 130.37 | 0.21 |
| Carp | 31658 | Bridge | | | | | | | | |
| Carp | 31642.1 | Max WS | 37.85 | 88.75 | 91.24 | 91.28 | 1.03 | 126 | 0.22 | |
| Carp | 31414 | Max WS | 40.73 | 88.89 | 91.08 | 90.56 | 91.12 | 1.15 | 104.38 | 0.27 |

Existing 100 year with Normal Depth Condition

HEC-RAS Plan: E100MnHtTcND River: Carp River Reach: Carp Profile: Max WS

| Reach | River Sta | Profile | Q Total (m3/s) | Min Ch El (m) | W.S. Elev (m) | Crit W.S. (m) | E.G. Elev (m) | Vel Chnl (m/s) | Top Width (m) | Froude # | Chl |
|-------|-----------|----------------|-------------------|------------------|------------------|------------------|------------------|-------------------|------------------|----------|------|
| Carp | 44953 | Max WS | 9.28 | 92.75 | 94.79 | | 94.79 | 0.17 | 170.15 | | 0.04 |
| Carp | 44890 | Max WS | 9.27 | 92.63 | 94.78 | | 94.79 | 0.18 | 203.19 | | 0.05 |
| Carp | 44751 | Max WS | 9.26 | 92.38 | 94.78 | | 94.78 | 0.21 | 182.36 | | 0.05 |
| Carp | 44548 | Max WS | 12.66 | 92.43 | 94.77 | | 94.77 | 0.15 | 129.18 | | 0.03 |
| Carp | 44325 | Max WS | 12.96 | 92.11 | 94.75 | | 94.79 | 0.94 | 251.17 | | 0.2 |
| Carp | 44324 | Hazeldean Cul | | | | | | | | | |
| Carp | 44302 | Max WS | 12.96 | 92.6 | 94.43 | | 94.5 | 1.16 | 122.13 | | 0.27 |
| Carp | 44215 | Max WS | 12.95 | 92.7 | 94.45 | | 94.45 | 0.23 | 133.7 | | 0.05 |
| Carp | 44153 | Max WS | 12.95 | 92 | 94.45 | | 94.45 | 0.21 | 134.37 | | 0.05 |
| Carp | 43966 | Max WS | 12.94 | 91.99 | 94.44 | | 94.44 | 0.14 | 225.85 | | 0.03 |
| Carp | 43764 | Max WS | 13.98 | 92.3 | 94.44 | | 94.44 | 0.13 | 226.59 | | 0.03 |
| Carp | 43582 | Max WS | 14.11 | 92.34 | 94.43 | | 94.43 | 0.15 | 212.53 | | 0.03 |
| Carp | 43375 | Max WS | 14 | 91.62 | 94.37 | | 94.43 | 1.05 | 145.94 | | 0.22 |
| Carp | 43370 | Maple Grove C | | | | | | | | | |
| Carp | 43364 | Max WS | 14 | 91.01 | 94.36 | | 94.41 | 0.93 | 238.95 | | 0.18 |
| Carp | 43223 | Max WS | 13.98 | 91.91 | 94.37 | | 94.37 | 0.18 | 203.85 | | 0.04 |
| Carp | 43173 | Max WS | 13.98 | 92.2 | 94.37 | | 94.37 | 0.15 | 297.56 | | 0.03 |
| Carp | 43072 | Max WS | 31.67 | 92.12 | 94.36 | | 94.36 | 0.35 | 284.13 | | 0.08 |
| Carp | 42890 | Max WS | 32.3 | 91.68 | 94.29 | 92.76 | 94.32 | 0.81 | 138.49 | | 0.17 |
| Carp | 42885 | Palladium Driv | | | | | | | | | |
| Carp | 42855 | Max WS | 32.3 | 91.57 | 94.26 | | 94.29 | 0.81 | 173.87 | | 0.17 |
| Carp | 42686 | Max WS | 32.31 | 91.9 | 94.25 | | 94.25 | 0.37 | 139.62 | | 0.08 |
| Carp | 42558 | Max WS | 32.31 | 91.83 | 94.21 | | 94.22 | 0.48 | 147.5 | | 0.12 |
| Carp | 42410 | Max WS | 33.08 | 91.81 | 94.17 | | 94.17 | 0.51 | 154.69 | | 0.11 |

| | | | | | | | | | | |
|------|---------|------------------------|-------|-------|-------|-------|-------|------|--------|------|
| Carp | 42212 | Max WS | 33.09 | 91.76 | 94.14 | | 94.14 | 0.26 | 164.73 | 0.06 |
| Carp | 42182 | Max WS | 33.09 | 91.51 | 94.09 | 93.12 | 94.17 | 1.35 | 209.78 | 0.3 |
| Carp | 42172 | Highway 417 S Bridge | | | | | | | | |
| Carp | 42154 | Max WS | 33.08 | 91.24 | 94.04 | | 94.12 | 1.32 | 181.72 | 0.29 |
| Carp | 42134 | Max WS | 33.08 | 91.88 | 94.01 | | 94.1 | 1.41 | 176.33 | 0.33 |
| Carp | 42124 | Max WS | 33.08 | 91.36 | 93.98 | 93.06 | 94.07 | 1.4 | 171.34 | 0.31 |
| Carp | 42119 | Highway 417 N Bridge | | | | | | | | |
| Carp | 42097 | Max WS | 33.06 | 91.68 | 93.9 | | 94.01 | 1.55 | 101.99 | 0.36 |
| Carp | 42075 | Max WS | 33.07 | 91.46 | 93.94 | | 93.95 | 0.44 | 183.79 | 0.1 |
| Carp | 42002 | Max WS | 33.07 | 91.4 | 93.93 | | 93.93 | 0.39 | 131.96 | 0.09 |
| Carp | 41896 | Max WS | 33.2 | 91.77 | 93.9 | | 93.91 | 0.39 | 105.51 | 0.09 |
| Carp | 41743 | Max WS | 33.18 | 91.43 | 93.88 | | 93.88 | 0.35 | 193.71 | 0.08 |
| Carp | 41671 | Max WS | 33.13 | 91.18 | 93.86 | | 93.87 | 0.88 | 251.15 | 0.2 |
| Carp | 41357 | Max WS | 41.54 | 91.46 | 93.48 | | 93.48 | 0.41 | 502.64 | 0.11 |
| Carp | 41117 | Max WS | 41.23 | 91.45 | 93.43 | | 93.43 | 0.31 | 454.18 | 0.08 |
| Carp | 40910 | Max WS | 41.41 | 91.38 | 93.4 | | 93.4 | 0.27 | 395.95 | 0.07 |
| Carp | 40703 | Max WS | 41.47 | 91.65 | 93.37 | | 93.38 | 0.3 | 372.72 | 0.08 |
| Carp | 40505 | Max WS | 42.21 | 91.07 | 93.34 | | 93.34 | 0.33 | 320.12 | 0.09 |
| Carp | 40298 | Max WS | 42.21 | 91.02 | 93.31 | | 93.31 | 0.27 | 402.91 | 0.07 |
| Carp | 40092 | Max WS | 42.3 | 91.22 | 93.27 | | 93.28 | 0.48 | 265.07 | 0.12 |
| Carp | 40071 | Max WS | 42.4 | 91.13 | 93.15 | | 93.4 | 2.2 | 229.99 | 0.54 |
| Carp | 40070 | Richardson Sic Culvert | | | | | | | | |
| Carp | 40050 | Max WS | 42.31 | 91.04 | 93.15 | | 93.38 | 2.11 | 222.87 | 0.51 |
| Carp | 39892 | Max WS | 42.6 | 91.02 | 93.18 | | 93.2 | 0.59 | 216.02 | 0.15 |
| Carp | 39695 | Max WS | 42.44 | 91.29 | 93.1 | | 93.11 | 0.72 | 208.66 | 0.19 |
| Carp | 39202 | Max WS | 41.23 | 90.57 | 92.91 | | 92.92 | 0.59 | 341.02 | 0.13 |
| Carp | 38697 | Max WS | 40.84 | 90.07 | 92.86 | | 92.86 | 0.23 | 415.18 | 0.05 |
| Carp | 38236 | Max WS | 40.85 | 90.16 | 92.83 | | 92.83 | 0.4 | 365.67 | 0.08 |
| Carp | 37894 | Max WS | 56.32 | 90.03 | 92.78 | | 92.78 | 0.43 | 367.55 | 0.09 |
| Carp | 37380.3 | Max WS | 55.35 | 89.67 | 92.68 | 91.49 | 92.87 | 1.92 | 389.36 | 0.38 |
| Carp | 37370 | Bridge | | | | | | | | |
| Carp | 37355.3 | Max WS | 52.05 | 89.66 | 92.52 | | 92.71 | 1.93 | 355.95 | 0.4 |
| Carp | 37101 | Max WS | 52.72 | 89.48 | 92.55 | | 92.56 | 0.35 | 341.79 | 0.07 |
| Carp | 36580 | Max WS | 52.37 | 89.1 | 92.53 | | 92.53 | 0.3 | 400.14 | 0.06 |
| Carp | 35288 | Max WS | 51.87 | 89.05 | 92.41 | | 92.42 | 0.67 | 284.04 | 0.13 |
| Carp | 35073 | Max WS | 51.82 | 89.27 | 92.37 | | 92.38 | 0.7 | 160.59 | 0.14 |
| Carp | 34555 | Max WS | 51.68 | 89.06 | 92.21 | | 92.24 | 1 | 130.93 | 0.19 |
| Carp | 33472 | Max WS | 51.51 | 88.54 | 91.99 | | 92 | 0.55 | 211.61 | 0.1 |
| Carp | 33201 | Max WS | 52.08 | 89.15 | 91.9 | 90.52 | 91.98 | 1.22 | 245 | 0.25 |
| Carp | 33197 | Bridge | | | | | | | | |
| Carp | 33181.1 | Max WS | 52.05 | 89.16 | 91.85 | | 91.93 | 1.25 | 236.36 | 0.26 |
| Carp | 32609 | Max WS | 51.99 | 89.56 | 91.73 | | 91.74 | 0.66 | 264.74 | 0.15 |
| Carp | 32096 | Max WS | 51.96 | 88.9 | 91.61 | | 91.62 | 0.6 | 271.76 | 0.13 |
| Carp | 31662 | Max WS | 51.96 | 88.74 | 91.45 | 90.22 | 91.51 | 1.22 | 132.76 | 0.24 |
| Carp | 31658 | Bridge | | | | | | | | |
| Carp | 31642.1 | Max WS | 51.93 | 88.75 | 91.43 | | 91.5 | 1.27 | 128.4 | 0.26 |
| Carp | 31414 | Max WS | 56.17 | 88.89 | 91.27 | 90.77 | 91.32 | 1.24 | 115.58 | 0.28 |

Future Condition with Starting Water Elevation Condition

Future 2 year with Starting Water Elevation Condition

HEC-RAS Plan: F2w3.8nHFFTC River: Carp River Reach: Carp Profile: Max WS

| Reach | River Sta | Profile | Q Total (m3/s) | Min Ch El (m) | W.S. Elev (m) | Crit W.S. (m) | E.G. Elev (m) | Vel Chnl (m/s) | Top Width (m) | Froude # | Chl |
|-------|-----------|----------------------|-------------------|------------------|------------------|------------------|------------------|-------------------|------------------|----------|------|
| Carp | 44953 | Max WS | 3.59 | 92.75 | 93.92 | | 93.92 | 0.26 | 34.35 | | 0.1 |
| Carp | 44890 | Max WS | 3.59 | 92.63 | 93.89 | | 93.89 | 0.41 | 36.16 | | 0.16 |
| Carp | 44751 | Max WS | 3.58 | 92.38 | 93.83 | | 93.83 | 0.28 | 15.31 | | 0.1 |
| Carp | 44548 | Max WS | 5.15 | 92.43 | 93.75 | | 93.75 | 0.24 | 91.46 | | 0.08 |
| Carp | 44325 | Max WS | 5.2 | 92.12 | 93.67 | 92.88 | 93.67 | 0.38 | 41.7 | | 0.11 |
| Carp | 44324 | Hazeldean Cul Bridge | | | | | | | | | |
| Carp | 44302 | Max WS | 5.08 | 92.45 | 93.61 | | 93.62 | 0.57 | 45.49 | | 0.22 |
| Carp | 44267.4 | Max WS | 5.05 | 92.44 | 93.59 | | 93.6 | 0.47 | 80.56 | | 0.18 |
| Carp | 44218 | Max WS | 5.02 | 92.43 | 93.58 | | 93.59 | 0.22 | 147.57 | | 0.08 |
| Carp | 44193 | Max WS | 5.02 | 92.41 | 93.58 | | 93.58 | 0.17 | 141.06 | | 0.06 |
| Carp | 44153 | Max WS | 5.02 | 92.4 | 93.58 | | 93.58 | 0.13 | 129.08 | | 0.05 |
| Carp | 44093 | Max WS | 5.01 | 92.4 | 93.58 | | 93.58 | 0.11 | 116.89 | | 0.05 |
| Carp | 44068 | Max WS | 4.99 | 92.39 | 93.58 | | 93.58 | 0.1 | 142.31 | | 0.04 |
| Carp | 44044.2 | Max WS | 4.99 | 92.38 | 93.58 | | 93.58 | 0.12 | 143.03 | | 0.05 |
| Carp | 44020.4 | Max WS | 4.99 | 92.35 | 93.58 | | 93.58 | 0.11 | 138.94 | | 0.04 |
| Carp | 44013.6 | Max WS | 4.99 | 92.35 | 93.58 | | 93.58 | 0.09 | 130.76 | | 0.04 |
| Carp | 43993.2 | Max WS | 4.99 | 92.34 | 93.58 | | 93.58 | 0.11 | 142.06 | | 0.05 |
| Carp | 43966 | Max WS | 4.99 | 92.33 | 93.57 | | 93.58 | 0.14 | 115.92 | | 0.06 |
| Carp | 43954 | Max WS | 5.31 | 92.33 | 93.57 | | 93.57 | 0.1 | 141.2 | | 0.04 |
| Carp | 43946 | Max WS | 5.31 | 92.32 | 93.57 | | 93.57 | 0.12 | 144.09 | | 0.04 |
| Carp | 43938 | Max WS | 5.31 | 92.31 | 93.57 | | 93.57 | 0.09 | 146.17 | | 0.03 |
| Carp | 43852 | Max WS | 5.3 | 92.2 | 93.57 | | 93.57 | 0.31 | 138.19 | | 0.11 |
| Carp | 43822 | Max WS | 5.3 | 92.22 | 93.57 | | 93.57 | 0.14 | 126.96 | | 0.05 |
| Carp | 43813 | Max WS | 5.3 | 92.22 | 93.57 | | 93.57 | 0.24 | 93.59 | | 0.09 |
| Carp | 43799.6 | Max WS | 5.3 | 92.22 | 93.56 | | 93.57 | 0.21 | 99.96 | | 0.08 |
| Carp | 43764 | Max WS | 5.3 | 92.21 | 93.56 | | 93.56 | 0.15 | 153.23 | | 0.06 |
| Carp | 43745.8 | Max WS | 5.36 | 92.21 | 93.56 | | 93.56 | 0.15 | 153.22 | | 0.06 |
| Carp | 43645.7 | Max WS | 5.35 | 92.2 | 93.56 | | 93.56 | 0.14 | 127.74 | | 0.05 |
| Carp | 43582 | Max WS | 5.34 | 92.17 | 93.56 | | 93.56 | 0.13 | 133.29 | | 0.04 |
| Carp | 43572.4 | Max WS | 5.35 | 92.17 | 93.56 | | 93.56 | 0.15 | 105.22 | | 0.05 |
| Carp | 43524.2 | Max WS | 5.67 | 92.15 | 93.55 | | 93.56 | 0.19 | 98.7 | | 0.06 |
| Carp | 43519.4 | Max WS | 5.67 | 92.15 | 93.55 | | 93.55 | 0.19 | 95.35 | | 0.06 |
| Carp | 43375 | Max WS | 5.66 | 92.09 | 93.53 | 92.71 | 93.54 | 0.47 | 71.24 | | 0.17 |
| Carp | 43370 | Maple Gr. Upg Bridge | | | | | | | | | |
| Carp | 43364 | Max WS | 5.66 | 92.08 | 93.51 | | 93.52 | 0.51 | 21.26 | | 0.18 |
| Carp | 43223 | Max WS | 5.66 | 92.01 | 93.49 | | 93.49 | 0.08 | 116.26 | | 0.03 |
| Carp | 43215.2 | Max WS | 5.66 | 92.01 | 93.49 | | 93.49 | 0.08 | 116.76 | | 0.03 |
| Carp | 43199.8 | Max WS | 5.66 | 92.01 | 93.49 | | 93.49 | 0.08 | 133.9 | | 0.03 |
| Carp | 43196 | Max WS | 5.66 | 92.01 | 93.49 | | 93.49 | 0.08 | 133.75 | | 0.03 |
| Carp | 43180.6 | Max WS | 5.66 | 92.01 | 93.49 | | 93.49 | 0.08 | 143.01 | | 0.03 |
| Carp | 43173 | Max WS | 5.66 | 92.01 | 93.49 | | 93.49 | 0.08 | 241.51 | | 0.03 |
| Carp | 43163.8 | Max WS | 9.09 | 92.01 | 93.49 | | 93.49 | 0.17 | 173.82 | | 0.06 |
| Carp | 43136.4 | Max WS | 9.09 | 92.01 | 93.49 | | 93.49 | 0.16 | 103.11 | | 0.06 |
| Carp | 43131.8 | Max WS | 9.09 | 92.01 | 93.49 | | 93.49 | 0.16 | 102.94 | | 0.07 |
| Carp | 43113.6 | Max WS | 9.09 | 92 | 93.49 | | 93.49 | 0.16 | 104.93 | | 0.07 |
| Carp | 43100 | Max WS | 9.09 | 92 | 93.49 | | 93.49 | 0.16 | 109.22 | | 0.07 |

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|------|-----------------------------|-------|-------|-------|-------|-------|------|--------|------|
| Carp | 43072 Max WS | 9.09 | 92 | 93.47 | | 93.49 | 0.61 | 104.44 | 0.28 |
| Carp | 43028.3 Max WS | 9.09 | 91.96 | 93.41 | | 93.43 | 0.67 | 94.84 | 0.28 |
| Carp | 43018.6 Max WS | 9.09 | 91.96 | 93.4 | | 93.42 | 0.68 | 92.86 | 0.28 |
| Carp | 42975 Max WS | 9.09 | 91.92 | 93.34 | | 93.37 | 0.78 | 84.27 | 0.3 |
| Carp | 42970.1 Max WS | 9.08 | 91.92 | 93.33 | | 93.37 | 0.92 | 107.56 | 0.27 |
| Carp | 42951.2 Max WS | 9.34 | 91.91 | 93.32 | | 93.35 | 0.71 | 106.02 | 0.23 |
| Carp | 42918.2 Max WS | 9.33 | 91.91 | 93.3 | | 93.32 | 0.66 | 90.86 | 0.25 |
| Carp | 42913.5 Max WS | 9.33 | 91.91 | 93.3 | | 93.32 | 0.67 | 85.9 | 0.27 |
| Carp | 42904.1 Max WS | 9.33 | 91.9 | 93.28 | | 93.31 | 0.71 | 80.06 | 0.29 |
| Carp | 42890 Max WS | 9.32 | 91.9 | 93.26 | | 93.29 | 0.74 | 71.34 | 0.31 |
| Carp | 42889 Max WS | 9.33 | 91.8 | 93.27 | 92.52 | 93.29 | 0.72 | 162.67 | 0.2 |
| Carp | 42885 Palladium Driv Bridge | | | | | | | | |
| Carp | 42855 Max WS | 9.32 | 91.85 | 93.24 | | 93.26 | 0.63 | 202.71 | 0.23 |
| Carp | 42716 Max WS | 9.32 | 91.75 | 93.22 | | 93.23 | 0.31 | 121.62 | 0.12 |
| Carp | 42700.9 Max WS | 9.32 | 91.74 | 93.22 | | 93.22 | 0.31 | 113.44 | 0.12 |
| Carp | 42686 Max WS | 9.32 | 91.73 | 93.21 | | 93.22 | 0.32 | 101.4 | 0.12 |
| Carp | 42558 Max WS | 9.33 | 91.71 | 93.18 | | 93.18 | 0.41 | 64.32 | 0.17 |
| Carp | 42548.4 Max WS | 9.63 | 91.7 | 93.17 | | 93.18 | 0.37 | 63.76 | 0.15 |
| Carp | 42410 Max WS | 9.63 | 91.6 | 93.13 | | 93.15 | 0.7 | 65.01 | 0.19 |
| Carp | 42391.5 Max WS | 9.63 | 91.59 | 93.12 | | 93.14 | 0.69 | 62.31 | 0.19 |
| Carp | 42212 Max WS | 9.62 | 91.52 | 93.06 | | 93.07 | 0.5 | 77.37 | 0.14 |
| Carp | 42182 Max WS | 9.61 | 91.51 | 93.01 | 92.47 | 93.05 | 0.87 | 17.47 | 0.34 |
| Carp | 42172 Highway 417 S Bridge | | | | | | | | |
| Carp | 42154 Max WS | 9.61 | 91.24 | 92.98 | | 93.01 | 0.82 | 15.96 | 0.3 |
| Carp | 42134 Max WS | 9.61 | 91.51 | 92.98 | | 93 | 0.58 | 20.93 | 0.2 |
| Carp | 42124 Max WS | 9.59 | 91.36 | 92.95 | 92.38 | 92.99 | 0.9 | 14.93 | 0.33 |
| Carp | 42119 Highway 417 N Bridge | | | | | | | | |
| Carp | 42097 Max WS | 9.59 | 91.49 | 92.94 | | 92.96 | 0.68 | 15.39 | 0.22 |
| Carp | 42075 Max WS | 9.59 | 91.48 | 92.94 | | 92.94 | 0.16 | 103.57 | 0.05 |
| Carp | 42036 Max WS | 9.59 | 91.47 | 92.93 | | 92.94 | 0.34 | 136.81 | 0.15 |
| Carp | 42002 Max WS | 9.58 | 91.46 | 92.92 | | 92.93 | 0.35 | 132.08 | 0.13 |
| Carp | 41997.6 Max WS | 9.59 | 91.46 | 92.92 | | 92.93 | 0.39 | 128.32 | 0.14 |
| Carp | 41970.1 Max WS | 9.59 | 91.44 | 92.92 | | 92.92 | 0.15 | 130.32 | 0.06 |
| Carp | 41948.9 Max WS | 9.74 | 91.44 | 92.92 | | 92.92 | 0.24 | 108.41 | 0.09 |
| Carp | 41896 Max WS | 9.74 | 91.42 | 92.9 | | 92.91 | 0.57 | 115.23 | 0.15 |
| Carp | 41845.2 Max WS | 9.73 | 91.4 | 92.89 | | 92.9 | 0.5 | 86.54 | 0.17 |
| Carp | 41836 Max WS | 9.73 | 91.4 | 92.89 | | 92.89 | 0.33 | 116.43 | 0.11 |
| Carp | 41776 Max WS | 9.72 | 91.38 | 92.87 | | 92.88 | 0.51 | 119.4 | 0.16 |
| Carp | 41769 Max WS | 9.72 | 91.38 | 92.87 | | 92.88 | 0.4 | 105.95 | 0.13 |
| Carp | 41744 Max WS | 9.73 | 91.36 | 92.87 | | 92.87 | 0.21 | 116.92 | 0.1 |
| Carp | 41743 Max WS | 9.73 | 91.36 | 92.86 | 92.08 | 92.88 | 0.61 | 108.8 | 0.21 |
| Carp | 41738 Fut Transitway Bridge | | | | | | | | |
| Carp | 41725.5 Max WS | 9.73 | 91.35 | 92.86 | | 92.87 | 0.34 | 142.46 | 0.1 |
| Carp | 41671 Max WS | 9.73 | 91.35 | 92.86 | | 92.87 | 0.4 | 85.13 | 0.14 |
| Carp | 41608 Max WS | 11.11 | 91.32 | 92.85 | 91.91 | 92.86 | 0.33 | 106.4 | 0.1 |
| Carp | 41602 Future Campe Bridge | | | | | | | | |
| Carp | 41572 Max WS | 11.11 | 91.31 | 92.84 | | 92.85 | 0.33 | 110.1 | 0.1 |
| Carp | 41374.8 Max WS | 10.93 | 91.26 | 92.74 | | 92.81 | 1.2 | 16.98 | 0.37 |
| Carp | 41357 Max WS | 10.7 | 91.26 | 92.69 | | 92.77 | 1.22 | 13.18 | 0.48 |
| Carp | 41349.4 Max WS | 10.63 | 91.25 | 92.68 | | 92.74 | 1.15 | 157.08 | 0.47 |
| Carp | 41338 Max WS | 10.59 | 91.24 | 92.67 | | 92.67 | 0.08 | 196.41 | 0.03 |
| Carp | 41320 Max WS | 10.59 | 91.24 | 92.67 | | 92.67 | 0.1 | 233.93 | 0.03 |

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|------|---------|------------------------|-------|-------|-------|-------|-------|--------|--------|------|
| Carp | 41198 | Max WS | 10.6 | 91.21 | 92.67 | 92.67 | 0.11 | 197.97 | 0.04 | |
| Carp | 41180 | Max WS | 10.6 | 91.21 | 92.67 | 92.67 | 0.09 | 210.73 | 0.03 | |
| Carp | 41125.4 | Max WS | 10.56 | 91.21 | 92.67 | 92.67 | 0.52 | 194.79 | 0.14 | |
| Carp | 41117 | Max WS | 10.56 | 91.2 | 92.66 | 92.67 | 0.38 | 190.02 | 0.15 | |
| Carp | 41071 | Max WS | 10.49 | 91.18 | 92.65 | 92.65 | 0.41 | 181.85 | 0.16 | |
| Carp | 40965.2 | Max WS | 10.69 | 91.14 | 92.64 | 92.64 | 0.1 | 170.62 | 0.04 | |
| Carp | 40956 | Max WS | 10.69 | 91.14 | 92.63 | 92.65 | 0.47 | 169.74 | 0.18 | |
| Carp | 40919.2 | Max WS | 10.66 | 91.12 | 92.63 | 92.64 | 0.3 | 150.17 | 0.1 | |
| Carp | 40910 | Max WS | 10.69 | 91.12 | 92.63 | 92.63 | 0.07 | 200.33 | 0.02 | |
| Carp | 40703 | Max WS | 10.67 | 91.05 | 92.63 | 92.63 | 0.07 | 155.07 | 0.02 | |
| Carp | 40688.5 | Max WS | 10.82 | 91.04 | 92.63 | 92.63 | 0.39 | 132.71 | 0.13 | |
| Carp | 40640.2 | Max WS | 10.83 | 91.03 | 92.62 | 92.62 | 0.31 | 247.88 | 0.1 | |
| Carp | 40505 | Max WS | 10.8 | 91 | 92.61 | 92.61 | 0.2 | 251.6 | 0.07 | |
| Carp | 40423.5 | Max WS | 10.78 | 90.97 | 92.61 | 92.61 | 0.17 | 293.88 | 0.05 | |
| Carp | 40415 | Max WS | 10.78 | 90.96 | 92.61 | 92.61 | 0.16 | 278.74 | 0.05 | |
| Carp | 40348.1 | Max WS | 10.78 | 90.95 | 92.61 | 92.61 | 0.13 | 285.36 | 0.04 | |
| Carp | 40339.7 | Max WS | 10.78 | 90.95 | 92.61 | 92.61 | 0.05 | 283.88 | 0.02 | |
| Carp | 40298 | Max WS | 10.79 | 90.93 | 92.61 | 92.61 | 0.05 | 277.79 | 0.02 | |
| Carp | 40262.9 | Max WS | 11.22 | 90.92 | 92.61 | 92.61 | 0.07 | 265.97 | 0.02 | |
| Carp | 40113.9 | Max WS | 11.21 | 90.88 | 92.6 | 92.6 | 0.31 | 174.29 | 0.09 | |
| Carp | 40092 | Max WS | 11.21 | 90.87 | 92.59 | 92.6 | 0.32 | 163.77 | 0.09 | |
| Carp | 40077.6 | Max WS | 11.34 | 91.07 | 92.58 | 92.59 | 0.59 | 164.29 | 0.18 | |
| Carp | 40071.5 | Max WS | 11.33 | 91.15 | 92.54 | 92.58 | 0.91 | 180.91 | 0.28 | |
| Carp | 40070 | Richardson Sic Culvert | | | | | | | | |
| Carp | 40050 | Max WS | 11.33 | 91.15 | 92.55 | 92.58 | 0.79 | 150.18 | 0.23 | |
| Carp | 40035.1 | Max WS | 11.33 | 91.13 | 92.56 | 92.57 | 0.46 | 145.3 | 0.15 | |
| Carp | 39892 | Max WS | 11.32 | 90.99 | 92.52 | 92.53 | 0.35 | 45.84 | 0.11 | |
| Carp | 39695 | Max WS | 11.31 | 90.78 | 92.47 | 92.48 | 0.4 | 51.6 | 0.14 | |
| Carp | 39400 | Max WS | 11.29 | 90.66 | 92.38 | 92.39 | 0.46 | 67.88 | 0.13 | |
| Carp | 39202 | Max WS | 11.27 | 90.57 | 92.34 | 92.35 | 0.43 | 219.36 | 0.12 | |
| Carp | 39102 | Max WS | 11.27 | 90.47 | 92.31 | 92.32 | 0.5 | 292.91 | 0.14 | |
| Carp | 39002 | Max WS | 11.25 | 90.37 | 92.29 | 92.3 | 0.51 | 215.66 | 0.14 | |
| Carp | 38902 | Max WS | 11.25 | 90.27 | 92.27 | 92.27 | 0.41 | 249.09 | 0.11 | |
| Carp | 38697 | Max WS | 11.24 | 90.07 | 92.25 | 92.25 | 0.18 | 286.27 | 0.05 | |
| Carp | 38692.5 | Max WS | 11.27 | 90.07 | 92.25 | 92.25 | 0.18 | 285.29 | 0.05 | |
| Carp | 38236 | Max WS | 11.25 | 90.16 | 92.21 | 92.21 | 0.45 | 244.72 | 0.11 | |
| Carp | 37894 | Max WS | 15.59 | 90.03 | 92.15 | 92.16 | 0.37 | 290.82 | 0.09 | |
| Carp | 37869.5 | Max WS | 15.59 | 90.01 | 92.15 | 92.16 | 0.36 | 290.05 | 0.09 | |
| Carp | 37390.4 | Max WS | 15.5 | 89.68 | 92.12 | 92.12 | 0.22 | 283.62 | 0.05 | |
| Carp | 37380.4 | Max WS | 15.47 | 89.67 | 92.11 | 90.65 | 92.13 | 0.69 | 280.36 | 0.16 |
| Carp | 37370 | Huntmar Bridge | | | | | | | | |
| Carp | 37355.4 | Max WS | 15.37 | 89.66 | 92.09 | 92.12 | 0.7 | 265.91 | 0.16 | |
| Carp | 37101 | Max WS | 15.37 | 89.48 | 92.09 | 92.09 | 0.17 | 277.47 | 0.04 | |
| Carp | 36580 | Max WS | 15.36 | 89.1 | 92.08 | 92.08 | 0.16 | 374.92 | 0.03 | |
| Carp | 35288 | Max WS | 15.34 | 89.05 | 92.04 | 92.05 | 0.3 | 178.34 | 0.06 | |
| Carp | 35073 | Max WS | 15.34 | 89.27 | 92.03 | 92.04 | 0.27 | 113.71 | 0.05 | |
| Carp | 34555 | Max WS | 15.34 | 89.06 | 92.01 | 92.02 | 0.35 | 114.27 | 0.07 | |
| Carp | 33472 | Max WS | 15.39 | 88.54 | 91.99 | 91.99 | 0.17 | 210.95 | 0.03 | |
| Carp | 33201 | Max WS | 15.73 | 89.15 | 91.98 | 89.88 | 91.98 | 0.36 | 258.1 | 0.07 |
| Carp | 33197 | March Road Bridge | | | | | | | | |
| Carp | 33181 | Max WS | 15.73 | 89.16 | 91.97 | 91.98 | 0.36 | 257.38 | 0.07 | |
| Carp | 32609 | Max WS | 15.73 | 89.56 | 91.97 | 91.97 | 0.14 | 295.79 | 0.03 | |

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|------|-------|-----------|--------|-------|-------|-------|-------|-------|--------|------|
| Carp | 32096 | Max WS | 15.71 | 88.9 | 91.96 | | 91.96 | 0.12 | 329.85 | 0.02 |
| Carp | 31662 | Max WS | 15.6 | 88.74 | 91.95 | 89.54 | 91.96 | 0.32 | 139.03 | 0.06 |
| Carp | 31658 | Carp Road | Bridge | | | | | | | |
| Carp | 31642 | Max WS | 15.58 | 88.74 | 91.95 | | 91.96 | 0.32 | 139.02 | 0.06 |
| Carp | 31414 | Max WS | -50.75 | 88.89 | 91.95 | 90.72 | 91.96 | -0.57 | 171.25 | 0.11 |

Future 5 year with Starting Water Elevation Condition

HEC-RAS Plan: F5w3.8nHFETc River: Carp River Reach: Carp Profile: Max WS

| Reach | River Sta | Profile | Q Total (m3/s) | Min Ch El (m) | W.S. Elev (m) | Crit W.S. (m) | E.G. Elev (m) | Vel Chnl (m/s) | Top Width (m) | Froude # | Chl |
|-------|-----------|---------------|-------------------|------------------|------------------|------------------|------------------|-------------------|------------------|----------|------|
| Carp | 44953 | Max WS | 5.36 | 92.75 | 94.11 | | 94.12 | 0.28 | 50.74 | | 0.1 |
| Carp | 44890 | Max WS | 5.36 | 92.63 | 94.08 | | 94.09 | 0.38 | 82.05 | | 0.14 |
| Carp | 44751 | Max WS | 5.35 | 92.38 | 94.03 | | 94.03 | 0.33 | 44.53 | | 0.11 |
| Carp | 44548 | Max WS | 7.86 | 92.43 | 93.94 | | 93.94 | 0.25 | 103.22 | | 0.08 |
| Carp | 44325 | Max WS | 8.01 | 92.12 | 93.85 | 93.04 | 93.85 | 0.46 | 51.4 | | 0.13 |
| Carp | 44324 | Hazeldean Cul | Bridge | | | | | | | | |
| Carp | 44302 | Max WS | 7.96 | 92.45 | 93.75 | | 93.77 | 0.7 | 78.08 | | 0.24 |
| Carp | 44267.4 | Max WS | 7.96 | 92.44 | 93.74 | | 93.75 | 0.51 | 96.79 | | 0.18 |
| Carp | 44218 | Max WS | 7.96 | 92.43 | 93.73 | | 93.73 | 0.24 | 151.15 | | 0.08 |
| Carp | 44193 | Max WS | 7.96 | 92.41 | 93.73 | | 93.73 | 0.19 | 143.28 | | 0.06 |
| Carp | 44153 | Max WS | 7.96 | 92.4 | 93.73 | | 93.73 | 0.15 | 131.38 | | 0.05 |
| Carp | 44093 | Max WS | 7.96 | 92.4 | 93.72 | | 93.72 | 0.14 | 118.53 | | 0.05 |
| Carp | 44068 | Max WS | 7.95 | 92.39 | 93.72 | | 93.72 | 0.13 | 144.24 | | 0.04 |
| Carp | 44044.2 | Max WS | 7.94 | 92.38 | 93.72 | | 93.72 | 0.14 | 144.68 | | 0.05 |
| Carp | 44020.4 | Max WS | 7.94 | 92.35 | 93.72 | | 93.72 | 0.13 | 140.96 | | 0.05 |
| Carp | 44013.6 | Max WS | 7.94 | 92.35 | 93.72 | | 93.72 | 0.11 | 133.56 | | 0.04 |
| Carp | 43993.2 | Max WS | 7.94 | 92.34 | 93.72 | | 93.72 | 0.14 | 143.21 | | 0.05 |
| Carp | 43966 | Max WS | 7.94 | 92.33 | 93.72 | | 93.72 | 0.16 | 126.49 | | 0.06 |
| Carp | 43954 | Max WS | 8.47 | 92.33 | 93.72 | | 93.72 | 0.12 | 143.89 | | 0.04 |
| Carp | 43946 | Max WS | 8.47 | 92.32 | 93.72 | | 93.72 | 0.14 | 146.19 | | 0.05 |
| Carp | 43938 | Max WS | 8.47 | 92.31 | 93.72 | | 93.72 | 0.11 | 146.89 | | 0.04 |
| Carp | 43852 | Max WS | 8.46 | 92.2 | 93.71 | | 93.71 | 0.19 | 145.21 | | 0.06 |
| Carp | 43822 | Max WS | 8.46 | 92.22 | 93.71 | | 93.71 | 0.17 | 132.88 | | 0.06 |
| Carp | 43813 | Max WS | 8.46 | 92.22 | 93.71 | | 93.71 | 0.29 | 120.12 | | 0.1 |
| Carp | 43799.6 | Max WS | 8.46 | 92.22 | 93.71 | | 93.71 | 0.26 | 123.21 | | 0.09 |
| Carp | 43764 | Max WS | 8.46 | 92.21 | 93.71 | | 93.71 | 0.18 | 160.93 | | 0.07 |
| Carp | 43745.8 | Max WS | 8.58 | 92.21 | 93.71 | | 93.71 | 0.18 | 160.76 | | 0.07 |
| Carp | 43645.7 | Max WS | 8.58 | 92.2 | 93.7 | | 93.7 | 0.17 | 131.34 | | 0.06 |
| Carp | 43582 | Max WS | 8.58 | 92.17 | 93.7 | | 93.7 | 0.16 | 135.89 | | 0.05 |
| Carp | 43572.4 | Max WS | 8.58 | 92.17 | 93.7 | | 93.7 | 0.19 | 112.23 | | 0.06 |
| Carp | 43524.2 | Max WS | 8.86 | 92.15 | 93.7 | | 93.7 | 0.23 | 104.24 | | 0.07 |
| Carp | 43519.4 | Max WS | 8.86 | 92.15 | 93.7 | | 93.7 | 0.23 | 96.32 | | 0.07 |
| Carp | 43375 | Max WS | 8.86 | 92.09 | 93.66 | 93 | 93.68 | 0.63 | 72.69 | | 0.2 |
| Carp | 43370 | Maple Gr. Upg | Bridge | | | | | | | | |
| Carp | 43364 | Max WS | 8.85 | 92.08 | 93.63 | | 93.65 | 0.68 | 22.71 | | 0.24 |
| Carp | 43223 | Max WS | 8.85 | 92.01 | 93.61 | | 93.61 | 0.1 | 116.86 | | 0.04 |
| Carp | 43215.2 | Max WS | 8.85 | 92.01 | 93.61 | | 93.61 | 0.1 | 117.36 | | 0.04 |
| Carp | 43199.8 | Max WS | 8.85 | 92.01 | 93.61 | | 93.61 | 0.11 | 144.85 | | 0.04 |
| Carp | 43196 | Max WS | 8.85 | 92.01 | 93.61 | | 93.61 | 0.11 | 156.41 | | 0.04 |
| Carp | 43180.6 | Max WS | 8.85 | 92.01 | 93.61 | | 93.61 | 0.11 | 162.84 | | 0.04 |
| Carp | 43173 | Max WS | 8.85 | 92.01 | 93.61 | | 93.61 | 0.1 | 248.99 | | 0.03 |
| Carp | 43163.8 | Max WS | 14.92 | 92.01 | 93.61 | | 93.61 | 0.23 | 192.97 | | 0.08 |

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|------|---------|-----------------------|-------|-------|-------|-------|-------|--------|--------|------|
| Carp | 43136.4 | Max WS | 14.92 | 92.01 | 93.61 | 93.61 | 0.23 | 155.04 | 0.09 | |
| Carp | 43131.8 | Max WS | 14.92 | 92.01 | 93.61 | 93.61 | 0.23 | 109.62 | 0.09 | |
| Carp | 43113.6 | Max WS | 14.92 | 92 | 93.6 | 93.61 | 0.23 | 110.44 | 0.09 | |
| Carp | 43100 | Max WS | 14.92 | 92 | 93.6 | 93.6 | 0.22 | 114.13 | 0.09 | |
| Carp | 43072 | Max WS | 14.92 | 92 | 93.6 | 93.6 | 0.17 | 115.86 | 0.07 | |
| Carp | 43028.3 | Max WS | 14.94 | 91.96 | 93.59 | 93.59 | 0.19 | 107.76 | 0.07 | |
| Carp | 43018.6 | Max WS | 14.94 | 91.96 | 93.59 | 93.59 | 0.19 | 105.02 | 0.07 | |
| Carp | 42975 | Max WS | 14.93 | 91.92 | 93.52 | 93.57 | 0.98 | 89.88 | 0.37 | |
| Carp | 42970.1 | Max WS | 14.93 | 91.92 | 93.55 | 93.61 | 1.19 | 114.84 | 0.32 | |
| Carp | 42951.2 | Max WS | 15.21 | 91.91 | 93.53 | 93.57 | 0.91 | 113.12 | 0.26 | |
| Carp | 42918.2 | Max WS | 15.2 | 91.91 | 93.53 | 93.56 | 0.77 | 103.63 | 0.26 | |
| Carp | 42913.5 | Max WS | 15.2 | 91.91 | 93.53 | 93.56 | 0.77 | 101.81 | 0.27 | |
| Carp | 42904.1 | Max WS | 15.2 | 91.9 | 93.53 | 93.56 | 0.79 | 97.23 | 0.29 | |
| Carp | 42890 | Max WS | 15.18 | 91.9 | 93.49 | 93.52 | 0.84 | 78.7 | 0.33 | |
| Carp | 42889 | Max WS | 15.18 | 91.8 | 93.49 | 92.87 | 93.52 | 0.89 | 258.61 | 0.24 |
| Carp | 42885 | Palladium Driv Bridge | | | | | | | | |
| Carp | 42855 | Max WS | 15.15 | 91.85 | 93.46 | 93.49 | 0.8 | 206.8 | 0.26 | |
| Carp | 42716 | Max WS | 15.16 | 91.75 | 93.45 | 93.45 | 0.33 | 139.17 | 0.11 | |
| Carp | 42700.9 | Max WS | 15.16 | 91.74 | 93.45 | 93.45 | 0.34 | 129.17 | 0.11 | |
| Carp | 42686 | Max WS | 15.16 | 91.73 | 93.45 | 93.45 | 0.35 | 115.6 | 0.12 | |
| Carp | 42558 | Max WS | 15.17 | 91.71 | 93.41 | 93.42 | 0.47 | 75.27 | 0.17 | |
| Carp | 42548.4 | Max WS | 15.6 | 91.7 | 93.41 | 93.42 | 0.42 | 75.3 | 0.14 | |
| Carp | 42410 | Max WS | 15.59 | 91.6 | 93.37 | 93.39 | 0.79 | 71.54 | 0.2 | |
| Carp | 42391.5 | Max WS | 15.59 | 91.59 | 93.36 | 93.38 | 0.79 | 68.27 | 0.2 | |
| Carp | 42212 | Max WS | 15.6 | 91.52 | 93.3 | 93.31 | 0.58 | 80.88 | 0.14 | |
| Carp | 42182 | Max WS | 15.6 | 91.51 | 93.24 | 92.68 | 93.29 | 1.07 | 28.59 | 0.36 |
| Carp | 42172 | Highway 417 S Bridge | | | | | | | | |
| Carp | 42154 | Max WS | 15.6 | 91.24 | 93.2 | 93.25 | 1.03 | 23.47 | 0.34 | |
| Carp | 42134 | Max WS | 15.6 | 91.51 | 93.2 | 93.23 | 0.74 | 25.27 | 0.24 | |
| Carp | 42124 | Max WS | 15.6 | 91.36 | 93.16 | 92.6 | 93.22 | 1.12 | 21.81 | 0.38 |
| Carp | 42119 | Highway 417 N Bridge | | | | | | | | |
| Carp | 42097 | Max WS | 15.6 | 91.49 | 93.14 | 93.18 | 0.92 | 17.73 | 0.27 | |
| Carp | 42075 | Max WS | 15.42 | 91.48 | 93.16 | 93.16 | 0.19 | 104.66 | 0.06 | |
| Carp | 42036 | Max WS | 15.42 | 91.47 | 93.15 | 93.16 | 0.39 | 149.4 | 0.14 | |
| Carp | 42002 | Max WS | 15.42 | 91.46 | 93.15 | 93.15 | 0.16 | 135.11 | 0.05 | |
| Carp | 41997.6 | Max WS | 15.45 | 91.46 | 93.15 | 93.15 | 0.2 | 146.81 | 0.07 | |
| Carp | 41970.1 | Max WS | 15.45 | 91.44 | 93.15 | 93.15 | 0.17 | 142.84 | 0.06 | |
| Carp | 41948.9 | Max WS | 15.55 | 91.44 | 93.15 | 93.15 | 0.26 | 127.64 | 0.09 | |
| Carp | 41896 | Max WS | 15.56 | 91.42 | 93.14 | 93.15 | 0.28 | 132.2 | 0.07 | |
| Carp | 41845.2 | Max WS | 15.56 | 91.4 | 93.14 | 93.14 | 0.24 | 98.18 | 0.07 | |
| Carp | 41836 | Max WS | 15.56 | 91.4 | 93.14 | 93.14 | 0.34 | 121.13 | 0.1 | |
| Carp | 41776 | Max WS | 15.57 | 91.38 | 93.13 | 93.13 | 0.48 | 140.11 | 0.13 | |
| Carp | 41769 | Max WS | 15.57 | 91.38 | 93.13 | 93.13 | 0.41 | 122.54 | 0.12 | |
| Carp | 41744 | Max WS | 15.71 | 91.36 | 93.13 | 93.13 | 0.21 | 129.39 | 0.08 | |
| Carp | 41743 | Max WS | 15.68 | 91.36 | 93.11 | 92.45 | 93.14 | 0.75 | 113.54 | 0.23 |
| Carp | 41738 | Fut Transitway Bridge | | | | | | | | |
| Carp | 41725.5 | Max WS | 15.71 | 91.35 | 93.12 | 93.13 | 0.46 | 155.55 | 0.12 | |
| Carp | 41671 | Max WS | 15.71 | 91.35 | 93.12 | 93.12 | 0.42 | 99.55 | 0.13 | |
| Carp | 41608 | Max WS | 18.63 | 91.32 | 93.1 | 92.01 | 93.11 | 0.46 | 107.95 | 0.12 |
| Carp | 41602 | Future Campe Bridge | | | | | | | | |
| Carp | 41572 | Max WS | 18.59 | 91.31 | 93.09 | 93.1 | 0.46 | 110.1 | 0.12 | |
| Carp | 41374.8 | Max WS | 18.24 | 91.26 | 92.96 | 93.08 | 1.61 | 36.76 | 0.45 | |

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|------|------------------------------|-------|-------|-------|-------|-------|--------|--------|------|
| Carp | 41357 Max WS | 17.71 | 91.26 | 92.89 | 93.01 | 1.48 | 17.99 | 0.58 | |
| Carp | 41349.4 Max WS | 17.51 | 91.25 | 92.88 | 92.96 | 1.3 | 176.9 | 0.63 | |
| Carp | 41338 Max WS | 17.62 | 91.24 | 92.88 | 92.89 | 0.1 | 203.03 | 0.04 | |
| Carp | 41320 Max WS | 17.62 | 91.24 | 92.88 | 92.88 | 0.12 | 241.15 | 0.03 | |
| Carp | 41198 Max WS | 17.62 | 91.21 | 92.88 | 92.88 | 0.14 | 204.23 | 0.04 | |
| Carp | 41180 Max WS | 17.62 | 91.21 | 92.88 | 92.88 | 0.11 | 212.19 | 0.03 | |
| Carp | 41125.4 Max WS | 17.53 | 91.21 | 92.88 | 92.88 | 0.17 | 198.51 | 0.04 | |
| Carp | 41117 Max WS | 17.53 | 91.2 | 92.88 | 92.88 | 0.38 | 193.55 | 0.14 | |
| Carp | 41071 Max WS | 17.54 | 91.18 | 92.88 | 92.88 | 0.12 | 197.44 | 0.04 | |
| Carp | 40965.2 Max WS | 17.82 | 91.14 | 92.88 | 92.88 | 0.13 | 174.55 | 0.04 | |
| Carp | 40956 Max WS | 17.82 | 91.14 | 92.88 | 92.88 | 0.18 | 171.12 | 0.06 | |
| Carp | 40919.2 Max WS | 17.82 | 91.12 | 92.87 | 92.87 | 0.32 | 184.76 | 0.1 | |
| Carp | 40910 Max WS | 17.82 | 91.12 | 92.87 | 92.87 | 0.09 | 204.81 | 0.03 | |
| Carp | 40703 Max WS | 17.82 | 91.05 | 92.87 | 92.87 | 0.11 | 197.21 | 0.03 | |
| Carp | 40688.5 Max WS | 18.03 | 91.04 | 92.87 | 92.87 | 0.43 | 183.05 | 0.12 | |
| Carp | 40640.2 Max WS | 18.03 | 91.03 | 92.86 | 92.86 | 0.3 | 277.65 | 0.09 | |
| Carp | 40505 Max WS | 18.03 | 91 | 92.85 | 92.86 | 0.22 | 253.34 | 0.06 | |
| Carp | 40423.5 Max WS | 17.98 | 90.97 | 92.85 | 92.85 | 0.19 | 300.2 | 0.05 | |
| Carp | 40415 Max WS | 17.98 | 90.96 | 92.85 | 92.85 | 0.17 | 308.57 | 0.05 | |
| Carp | 40348.1 Max WS | 17.98 | 90.95 | 92.85 | 92.85 | 0.14 | 309.35 | 0.04 | |
| Carp | 40339.7 Max WS | 17.98 | 90.95 | 92.85 | 92.85 | 0.07 | 308.36 | 0.02 | |
| Carp | 40298 Max WS | 17.98 | 90.93 | 92.85 | 92.85 | 0.07 | 314.16 | 0.02 | |
| Carp | 40262.9 Max WS | 18.41 | 90.92 | 92.85 | 92.85 | 0.09 | 288.67 | 0.02 | |
| Carp | 40113.9 Max WS | 18.41 | 90.88 | 92.84 | 92.84 | 0.4 | 196.81 | 0.11 | |
| Carp | 40092 Max WS | 18.41 | 90.87 | 92.84 | 92.84 | 0.41 | 184.45 | 0.11 | |
| Carp | 40077.6 Max WS | 18.58 | 91.07 | 92.81 | 92.84 | 0.78 | 194.08 | 0.22 | |
| Carp | 40071.5 Max WS | 18.52 | 91.15 | 92.75 | 92.82 | 1.24 | 190.11 | 0.35 | |
| Carp | 40070 Richardson Sic Culvert | | | | | | | | |
| Carp | 40050 Max WS | 18.52 | 91.15 | 92.76 | 92.82 | 1.09 | 185.63 | 0.29 | |
| Carp | 40035.1 Max WS | 18.55 | 91.13 | 92.79 | 92.79 | 0.46 | 183.63 | 0.13 | |
| Carp | 39892 Max WS | 18.52 | 90.99 | 92.74 | 92.75 | 0.45 | 112.82 | 0.13 | |
| Carp | 39695 Max WS | 18.47 | 90.78 | 92.68 | 92.69 | 0.49 | 127.55 | 0.16 | |
| Carp | 39400 Max WS | 18.35 | 90.66 | 92.58 | 92.59 | 0.58 | 164.8 | 0.16 | |
| Carp | 39202 Max WS | 18.26 | 90.57 | 92.52 | 92.53 | 0.5 | 315.42 | 0.13 | |
| Carp | 39102 Max WS | 18.23 | 90.47 | 92.5 | 92.51 | 0.5 | 368.17 | 0.13 | |
| Carp | 39002 Max WS | 18.2 | 90.37 | 92.48 | 92.49 | 0.49 | 276.44 | 0.13 | |
| Carp | 38902 Max WS | 18.17 | 90.27 | 92.47 | 92.47 | 0.38 | 289.32 | 0.1 | |
| Carp | 38697 Max WS | 18.16 | 90.07 | 92.45 | 92.45 | 0.2 | 341.5 | 0.05 | |
| Carp | 38692.5 Max WS | 18.22 | 90.07 | 92.45 | 92.45 | 0.18 | 338.5 | 0.05 | |
| Carp | 38236 Max WS | 18.21 | 90.16 | 92.42 | 92.42 | 0.42 | 306.75 | 0.1 | |
| Carp | 37894 Max WS | 25.2 | 90.03 | 92.37 | 92.38 | 0.37 | 326.33 | 0.09 | |
| Carp | 37869.5 Max WS | 25.14 | 90.01 | 92.37 | 92.37 | 0.37 | 326.06 | 0.09 | |
| Carp | 37390.4 Max WS | 24.99 | 89.68 | 92.34 | 92.34 | 0.26 | 314.88 | 0.06 | |
| Carp | 37380.4 Max WS | 24.89 | 89.67 | 92.32 | 90.91 | 92.37 | 1.01 | 305.69 | 0.22 |
| Carp | 37370 Huntmar Bridge | | | | | | | | |
| Carp | 37355.4 Max WS | 24.59 | 89.66 | 92.28 | 92.33 | 1.01 | 295.42 | 0.22 | |
| Carp | 37101 Max WS | 24.59 | 89.48 | 92.28 | 92.28 | 0.21 | 302.77 | 0.04 | |
| Carp | 36580 Max WS | 24.49 | 89.1 | 92.27 | 92.27 | 0.19 | 385.88 | 0.04 | |
| Carp | 35288 Max WS | 24.45 | 89.05 | 92.22 | 92.22 | 0.39 | 225.59 | 0.08 | |
| Carp | 35073 Max WS | 24.44 | 89.27 | 92.2 | 92.21 | 0.38 | 137.64 | 0.07 | |
| Carp | 34555 Max WS | 24.43 | 89.06 | 92.16 | 92.17 | 0.49 | 127.91 | 0.09 | |
| Carp | 33472 Max WS | 24.48 | 88.54 | 92.12 | 92.12 | 0.24 | 226.14 | 0.04 | |

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|------|-------|------------|--------|-------|-------|-------|-------|-------|--------|------|
| Carp | 33201 | Max WS | 24.94 | 89.15 | 92.1 | 90.08 | 92.11 | 0.54 | 276.29 | 0.11 |
| Carp | 33197 | March Road | Bridge | | | | | | | |
| Carp | 33181 | Max WS | 24.94 | 89.16 | 92.09 | | 92.1 | 0.54 | 275.72 | 0.11 |
| Carp | 32609 | Max WS | 24.94 | 89.56 | 92.07 | | 92.07 | 0.2 | 310.76 | 0.04 |
| Carp | 32096 | Max WS | 24.92 | 88.9 | 92.06 | | 92.06 | 0.17 | 342.94 | 0.03 |
| Carp | 31662 | Max WS | 24.76 | 88.74 | 92.05 | 89.75 | 92.06 | 0.49 | 140.28 | 0.09 |
| Carp | 31658 | Carp Road | Bridge | | | | | | | |
| Carp | 31642 | Max WS | 24.54 | 88.74 | 92.05 | | 92.05 | 0.49 | 140.26 | 0.09 |
| Carp | 31414 | Max WS | -54.99 | 88.89 | 92.04 | 90.76 | 92.05 | -0.58 | 178.55 | 0.11 |

Future 25 year with Starting Water Elevation Condition

HEC-RAS Plan: F25w3.8nHFTc River: Carp River Reach: Carp Profile: Max WS

| Reach | River Sta | Profile | Q Total (m3/s) | Min Ch El (m) | W.S. Elev (m) | Crit W.S. (m) | E.G. Elev (m) | Vel Chnl (m/s) | Top Width (m) | Froude # | Chl |
|-------|-----------|---------------|-------------------|------------------|------------------|------------------|------------------|-------------------|------------------|----------|------|
| Carp | 44953 | Max WS | 7.81 | 92.75 | 94.3 | | 94.3 | 0.3 | 129.72 | | 0.1 |
| Carp | 44890 | Max WS | 7.81 | 92.63 | 94.28 | | 94.28 | 0.34 | 112.49 | | 0.12 |
| Carp | 44751 | Max WS | 7.8 | 92.38 | 94.23 | | 94.24 | 0.34 | 102.2 | | 0.11 |
| Carp | 44548 | Max WS | 11.63 | 92.43 | 94.16 | | 94.16 | 0.24 | 111.49 | | 0.07 |
| Carp | 44325 | Max WS | 11.8 | 92.12 | 94.08 | 93.17 | 94.09 | 0.53 | 97.51 | | 0.13 |
| Carp | 44324 | Hazeldean Cul | Bridge | | | | | | | | |
| Carp | 44302 | Max WS | 11.74 | 92.45 | 93.94 | | 93.96 | 0.79 | 92.38 | | 0.25 |
| Carp | 44267.4 | Max WS | 11.74 | 92.44 | 93.94 | | 93.94 | 0.49 | 111.46 | | 0.15 |
| Carp | 44218 | Max WS | 11.74 | 92.43 | 93.93 | | 93.93 | 0.24 | 156.18 | | 0.08 |
| Carp | 44193 | Max WS | 11.74 | 92.41 | 93.93 | | 93.93 | 0.19 | 147.13 | | 0.06 |
| Carp | 44153 | Max WS | 11.74 | 92.4 | 93.93 | | 93.93 | 0.16 | 134.6 | | 0.05 |
| Carp | 44093 | Max WS | 11.73 | 92.4 | 93.93 | | 93.93 | 0.15 | 120.84 | | 0.05 |
| Carp | 44068 | Max WS | 11.73 | 92.39 | 93.93 | | 93.93 | 0.14 | 146.96 | | 0.04 |
| Carp | 44044.2 | Max WS | 11.73 | 92.38 | 93.93 | | 93.93 | 0.15 | 147.02 | | 0.05 |
| Carp | 44020.4 | Max WS | 11.73 | 92.35 | 93.92 | | 93.93 | 0.15 | 144.32 | | 0.05 |
| Carp | 44013.6 | Max WS | 11.73 | 92.35 | 93.92 | | 93.92 | 0.12 | 138.35 | | 0.04 |
| Carp | 43993.2 | Max WS | 11.73 | 92.34 | 93.92 | | 93.92 | 0.15 | 145.01 | | 0.05 |
| Carp | 43966 | Max WS | 11.72 | 92.33 | 93.92 | | 93.92 | 0.18 | 142.41 | | 0.06 |
| Carp | 43954 | Max WS | 12.46 | 92.33 | 93.92 | | 93.92 | 0.13 | 144.91 | | 0.04 |
| Carp | 43946 | Max WS | 12.46 | 92.32 | 93.92 | | 93.92 | 0.15 | 147.21 | | 0.04 |
| Carp | 43938 | Max WS | 12.46 | 92.31 | 93.92 | | 93.92 | 0.12 | 147.91 | | 0.04 |
| Carp | 43852 | Max WS | 12.46 | 92.2 | 93.92 | | 93.92 | 0.2 | 150.73 | | 0.06 |
| Carp | 43822 | Max WS | 12.45 | 92.22 | 93.92 | | 93.92 | 0.19 | 156.66 | | 0.06 |
| Carp | 43813 | Max WS | 12.45 | 92.22 | 93.91 | | 93.92 | 0.3 | 144.02 | | 0.09 |
| Carp | 43799.6 | Max WS | 12.44 | 92.22 | 93.91 | | 93.92 | 0.27 | 153.73 | | 0.09 |
| Carp | 43764 | Max WS | 12.44 | 92.21 | 93.91 | | 93.91 | 0.2 | 209.75 | | 0.06 |
| Carp | 43745.8 | Max WS | 12.61 | 92.21 | 93.91 | | 93.91 | 0.2 | 210.37 | | 0.06 |
| Carp | 43645.7 | Max WS | 12.61 | 92.2 | 93.91 | | 93.91 | 0.19 | 138.64 | | 0.06 |
| Carp | 43582 | Max WS | 12.61 | 92.17 | 93.9 | | 93.91 | 0.18 | 139.88 | | 0.05 |
| Carp | 43572.4 | Max WS | 12.61 | 92.17 | 93.9 | | 93.91 | 0.22 | 126.79 | | 0.06 |
| Carp | 43524.2 | Max WS | 12.69 | 92.15 | 93.9 | | 93.9 | 0.25 | 112.28 | | 0.07 |
| Carp | 43519.4 | Max WS | 12.7 | 92.15 | 93.9 | | 93.9 | 0.25 | 97.72 | | 0.07 |
| Carp | 43375 | Max WS | 12.68 | 92.09 | 93.87 | 93.13 | 93.89 | 0.73 | 74.9 | | 0.22 |
| Carp | 43370 | Maple Gr. Upg | Bridge | | | | | | | | |
| Carp | 43364 | Max WS | 12.67 | 92.08 | 93.83 | | 93.86 | 0.78 | 79.59 | | 0.25 |
| Carp | 43223 | Max WS | 12.66 | 92.01 | 93.82 | | 93.83 | 0.12 | 117.92 | | 0.04 |
| Carp | 43215.2 | Max WS | 12.66 | 92.01 | 93.82 | | 93.83 | 0.12 | 118.42 | | 0.04 |
| Carp | 43199.8 | Max WS | 12.66 | 92.01 | 93.82 | | 93.82 | 0.12 | 158.95 | | 0.04 |

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|------|---------|-----------------------|-------|-------|-------|-------|-------|--------|--------|------|
| Carp | 43196 | Max WS | 12.66 | 92.01 | 93.82 | 93.82 | 0.13 | 183.21 | 0.04 | |
| Carp | 43180.6 | Max WS | 12.66 | 92.01 | 93.82 | 93.82 | 0.13 | 216.05 | 0.04 | |
| Carp | 43173 | Max WS | 12.66 | 92.01 | 93.82 | 93.82 | 0.11 | 266.14 | 0.03 | |
| Carp | 43163.8 | Max WS | 23.47 | 92.01 | 93.82 | 93.82 | 0.3 | 211.64 | 0.09 | |
| Carp | 43136.4 | Max WS | 23.47 | 92.01 | 93.82 | 93.82 | 0.29 | 217.55 | 0.1 | |
| Carp | 43131.8 | Max WS | 23.47 | 92.01 | 93.82 | 93.82 | 0.29 | 213.44 | 0.1 | |
| Carp | 43113.6 | Max WS | 23.47 | 92 | 93.82 | 93.82 | 0.29 | 150.48 | 0.1 | |
| Carp | 43100 | Max WS | 23.47 | 92 | 93.81 | 93.82 | 0.28 | 123.85 | 0.1 | |
| Carp | 43072 | Max WS | 23.46 | 92 | 93.81 | 93.81 | 0.22 | 134.42 | 0.08 | |
| Carp | 43028.3 | Max WS | 23.49 | 91.96 | 93.8 | 93.81 | 0.24 | 123.84 | 0.09 | |
| Carp | 43018.6 | Max WS | 23.49 | 91.96 | 93.8 | 93.8 | 0.24 | 120.71 | 0.09 | |
| Carp | 42975 | Max WS | 23.48 | 91.92 | 93.8 | 93.8 | 0.27 | 107.62 | 0.09 | |
| Carp | 42970.1 | Max WS | 23.48 | 91.92 | 93.8 | 93.8 | 0.36 | 119.91 | 0.09 | |
| Carp | 42951.2 | Max WS | 23.83 | 91.91 | 93.8 | 93.8 | 0.32 | 120.13 | 0.08 | |
| Carp | 42918.2 | Max WS | 23.83 | 91.91 | 93.79 | 93.8 | 0.3 | 119.32 | 0.09 | |
| Carp | 42913.5 | Max WS | 23.83 | 91.91 | 93.79 | 93.79 | 0.3 | 119.31 | 0.09 | |
| Carp | 42904.1 | Max WS | 23.81 | 91.9 | 93.79 | 93.79 | 0.3 | 119.1 | 0.09 | |
| Carp | 42890 | Max WS | 23.81 | 91.9 | 93.77 | 93.8 | 0.8 | 114.81 | 0.27 | |
| Carp | 42889 | Max WS | 23.81 | 91.8 | 93.76 | 93.06 | 93.8 | 1.09 | 264.47 | 0.26 |
| Carp | 42885 | Palladium Driv Bridge | | | | | | | | |
| Carp | 42855 | Max WS | 23.81 | 91.85 | 93.71 | 93.76 | 0.99 | 213.87 | 0.29 | |
| Carp | 42716 | Max WS | 23.81 | 91.75 | 93.71 | 93.72 | 0.36 | 151.78 | 0.1 | |
| Carp | 42700.9 | Max WS | 23.81 | 91.74 | 93.71 | 93.72 | 0.37 | 144.76 | 0.11 | |
| Carp | 42686 | Max WS | 23.81 | 91.73 | 93.71 | 93.71 | 0.4 | 133.81 | 0.12 | |
| Carp | 42558 | Max WS | 23.81 | 91.71 | 93.68 | 93.69 | 0.45 | 88.41 | 0.14 | |
| Carp | 42548.4 | Max WS | 24.52 | 91.7 | 93.68 | 93.69 | 0.47 | 83.73 | 0.14 | |
| Carp | 42410 | Max WS | 24.53 | 91.6 | 93.63 | 93.66 | 0.89 | 78.47 | 0.21 | |
| Carp | 42391.5 | Max WS | 24.53 | 91.59 | 93.63 | 93.65 | 0.89 | 74.21 | 0.21 | |
| Carp | 42212 | Max WS | 24.52 | 91.52 | 93.56 | 93.57 | 0.67 | 84.04 | 0.16 | |
| Carp | 42182 | Max WS | 24.47 | 91.51 | 93.48 | 92.91 | 93.57 | 1.32 | 65.39 | 0.39 |
| Carp | 42172 | Highway 417 S Bridge | | | | | | | | |
| Carp | 42154 | Max WS | 24.44 | 91.24 | 93.44 | 93.52 | 1.28 | 48.94 | 0.37 | |
| Carp | 42134 | Max WS | 24.47 | 91.51 | 93.46 | 93.5 | 0.9 | 52.44 | 0.27 | |
| Carp | 42124 | Max WS | 24.41 | 91.36 | 93.39 | 92.84 | 93.49 | 1.37 | 42.53 | 0.42 |
| Carp | 42119 | Highway 417 N Bridge | | | | | | | | |
| Carp | 42097 | Max WS | 24.41 | 91.49 | 93.38 | 93.45 | 1.19 | 20.42 | 0.33 | |
| Carp | 42075 | Max WS | 24.41 | 91.48 | 93.4 | 93.4 | 0.24 | 105.13 | 0.07 | |
| Carp | 42036 | Max WS | 24.41 | 91.47 | 93.4 | 93.4 | 0.2 | 151.6 | 0.06 | |
| Carp | 42002 | Max WS | 24.41 | 91.46 | 93.4 | 93.4 | 0.21 | 149.03 | 0.06 | |
| Carp | 41997.6 | Max WS | 24.47 | 91.46 | 93.4 | 93.4 | 0.23 | 151.11 | 0.07 | |
| Carp | 41970.1 | Max WS | 24.47 | 91.44 | 93.4 | 93.4 | 0.21 | 149.16 | 0.06 | |
| Carp | 41948.9 | Max WS | 24.5 | 91.44 | 93.4 | 93.4 | 0.29 | 182.13 | 0.08 | |
| Carp | 41896 | Max WS | 24.5 | 91.42 | 93.39 | 93.39 | 0.31 | 184.24 | 0.07 | |
| Carp | 41845.2 | Max WS | 24.5 | 91.4 | 93.39 | 93.39 | 0.29 | 149.49 | 0.08 | |
| Carp | 41836 | Max WS | 24.5 | 91.4 | 93.39 | 93.39 | 0.39 | 125.79 | 0.11 | |
| Carp | 41776 | Max WS | 24.51 | 91.38 | 93.38 | 93.38 | 0.5 | 148.97 | 0.13 | |
| Carp | 41769 | Max WS | 24.51 | 91.38 | 93.38 | 93.38 | 0.46 | 140.22 | 0.12 | |
| Carp | 41744 | Max WS | 24.53 | 91.36 | 93.38 | 93.38 | 0.24 | 150.11 | 0.08 | |
| Carp | 41743 | Max WS | 24.5 | 91.36 | 93.35 | 92.59 | 93.39 | 0.96 | 125.26 | 0.26 |
| Carp | 41738 | Fut Transitway Bridge | | | | | | | | |
| Carp | 41725.5 | Max WS | 24.53 | 91.35 | 93.36 | 93.38 | 0.62 | 177.43 | 0.15 | |
| Carp | 41671 | Max WS | 24.51 | 91.35 | 93.36 | 93.37 | 0.47 | 101.2 | 0.13 | |

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|------|---------|------------------------|-------|-------|-------|-------|-------|------|--------|------|
| Carp | 41608 | Max WS | 30.14 | 91.32 | 93.34 | 92.15 | 93.36 | 0.64 | 109.46 | 0.16 |
| Carp | 41602 | Future Campe Bridge | | | | | | | | |
| Carp | 41572 | Max WS | 30.02 | 91.31 | 93.31 | | 93.33 | 0.65 | 110.1 | 0.16 |
| Carp | 41374.8 | Max WS | 29.23 | 91.26 | 93.17 | | 93.32 | 1.9 | 94.1 | 0.5 |
| Carp | 41357 | Max WS | 28.72 | 91.26 | 93.14 | | 93.25 | 1.51 | 148.01 | 0.59 |
| Carp | 41349.4 | Max WS | 29.17 | 91.25 | 93.17 | | 93.17 | 0.11 | 269.13 | 0.05 |
| Carp | 41338 | Max WS | 29.17 | 91.24 | 93.17 | | 93.17 | 0.11 | 218.68 | 0.04 |
| Carp | 41320 | Max WS | 29.17 | 91.24 | 93.17 | | 93.17 | 0.14 | 250.06 | 0.04 |
| Carp | 41198 | Max WS | 29.18 | 91.21 | 93.17 | | 93.17 | 0.17 | 235.94 | 0.04 |
| Carp | 41180 | Max WS | 29.18 | 91.21 | 93.17 | | 93.17 | 0.14 | 214.19 | 0.04 |
| Carp | 41125.4 | Max WS | 29.18 | 91.21 | 93.17 | | 93.17 | 0.19 | 199.71 | 0.05 |
| Carp | 41117 | Max WS | 29.18 | 91.2 | 93.17 | | 93.17 | 0.39 | 194.77 | 0.12 |
| Carp | 41071 | Max WS | 29.24 | 91.18 | 93.17 | | 93.17 | 0.15 | 265.62 | 0.04 |
| Carp | 40965.2 | Max WS | 29.21 | 91.14 | 93.16 | | 93.17 | 0.16 | 180.18 | 0.04 |
| Carp | 40956 | Max WS | 29.21 | 91.14 | 93.16 | | 93.16 | 0.23 | 175.89 | 0.06 |
| Carp | 40919.2 | Max WS | 29.22 | 91.12 | 93.16 | | 93.16 | 0.35 | 187.25 | 0.09 |
| Carp | 40910 | Max WS | 29.22 | 91.12 | 93.16 | | 93.16 | 0.12 | 206.89 | 0.03 |
| Carp | 40703 | Max WS | 29.23 | 91.05 | 93.16 | | 93.16 | 0.14 | 199.57 | 0.04 |
| Carp | 40688.5 | Max WS | 29.8 | 91.04 | 93.15 | | 93.16 | 0.45 | 188.66 | 0.12 |
| Carp | 40640.2 | Max WS | 29.8 | 91.03 | 93.15 | | 93.15 | 0.31 | 313.2 | 0.08 |
| Carp | 40505 | Max WS | 29.72 | 91 | 93.14 | | 93.15 | 0.25 | 255.41 | 0.06 |
| Carp | 40423.5 | Max WS | 29.73 | 90.97 | 93.14 | | 93.14 | 0.21 | 300.2 | 0.05 |
| Carp | 40415 | Max WS | 29.73 | 90.96 | 93.14 | | 93.14 | 0.19 | 368.79 | 0.05 |
| Carp | 40348.1 | Max WS | 29.73 | 90.95 | 93.14 | | 93.14 | 0.17 | 341.55 | 0.04 |
| Carp | 40339.7 | Max WS | 29.73 | 90.95 | 93.14 | | 93.14 | 0.09 | 338.87 | 0.02 |
| Carp | 40298 | Max WS | 29.74 | 90.93 | 93.14 | | 93.14 | 0.1 | 381.38 | 0.03 |
| Carp | 40262.9 | Max WS | 30.16 | 90.92 | 93.14 | | 93.14 | 0.13 | 357.44 | 0.03 |
| Carp | 40113.9 | Max WS | 30.16 | 90.88 | 93.13 | | 93.14 | 0.54 | 280.4 | 0.13 |
| Carp | 40092 | Max WS | 30.16 | 90.87 | 93.12 | | 93.14 | 0.54 | 275.03 | 0.13 |
| Carp | 40077.6 | Max WS | 30.48 | 91.07 | 93.08 | | 93.13 | 1.04 | 264.74 | 0.26 |
| Carp | 40071.5 | Max WS | 30.07 | 91.15 | 92.96 | | 93.11 | 1.72 | 201.2 | 0.45 |
| Carp | 40070 | Richardson Sic Culvert | | | | | | | | |
| Carp | 40050 | Max WS | 30.21 | 91.15 | 92.99 | | 93.11 | 1.54 | 197.99 | 0.38 |
| Carp | 40035.1 | Max WS | 30.33 | 91.13 | 93.04 | | 93.04 | 0.47 | 233.4 | 0.12 |
| Carp | 39892 | Max WS | 30.27 | 90.99 | 93 | | 93.01 | 0.51 | 184.46 | 0.14 |
| Carp | 39695 | Max WS | 30.1 | 90.78 | 92.94 | | 92.95 | 0.51 | 196.11 | 0.15 |
| Carp | 39400 | Max WS | 29.69 | 90.66 | 92.86 | | 92.87 | 0.56 | 279.01 | 0.14 |
| Carp | 39202 | Max WS | 29.54 | 90.57 | 92.83 | | 92.83 | 0.38 | 345.8 | 0.09 |
| Carp | 39102 | Max WS | 29.48 | 90.47 | 92.82 | | 92.82 | 0.34 | 459.55 | 0.08 |
| Carp | 39002 | Max WS | 29.47 | 90.37 | 92.81 | | 92.81 | 0.37 | 425.71 | 0.09 |
| Carp | 38902 | Max WS | 29.42 | 90.27 | 92.8 | | 92.8 | 0.3 | 371.9 | 0.07 |
| Carp | 38697 | Max WS | 29.42 | 90.07 | 92.8 | | 92.8 | 0.18 | 407.04 | 0.04 |
| Carp | 38692.5 | Max WS | 29.59 | 90.07 | 92.79 | | 92.8 | 0.16 | 397.52 | 0.04 |
| Carp | 38236 | Max WS | 29.57 | 90.16 | 92.78 | | 92.78 | 0.32 | 360.21 | 0.07 |
| Carp | 37894 | Max WS | 42.46 | 90.03 | 92.74 | | 92.74 | 0.34 | 364.77 | 0.07 |
| Carp | 37869.5 | Max WS | 42.46 | 90.01 | 92.74 | | 92.74 | 0.34 | 366.88 | 0.07 |
| Carp | 37390.4 | Max WS | 42.31 | 89.68 | 92.72 | | 92.72 | 0.28 | 396.88 | 0.06 |
| Carp | 37380.4 | Max WS | 42.14 | 89.67 | 92.68 | 91.26 | 92.79 | 1.46 | 389.61 | 0.29 |
| Carp | 37370 | Huntmar Bridge | | | | | | | | |
| Carp | 37355.4 | Max WS | 41.18 | 89.66 | 92.6 | | 92.71 | 1.48 | 372.14 | 0.3 |
| Carp | 37101 | Max WS | 41.41 | 89.48 | 92.61 | | 92.61 | 0.27 | 362.03 | 0.05 |
| Carp | 36580 | Max WS | 41.32 | 89.1 | 92.6 | | 92.6 | 0.22 | 402.72 | 0.04 |

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|------|---------|-----------------------|-------|-------|-------|-------|-------|--------|--------|------|
| Carp | 43364 | Max WS | 16.16 | 92.08 | 94.02 | 94.06 | 0.84 | 103.15 | 0.24 | |
| Carp | 43223 | Max WS | 16.16 | 92.01 | 94.02 | 94.03 | 0.13 | 118.92 | 0.04 | |
| Carp | 43215.2 | Max WS | 16.16 | 92.01 | 94.02 | 94.03 | 0.13 | 119.42 | 0.04 | |
| Carp | 43199.8 | Max WS | 16.16 | 92.01 | 94.02 | 94.02 | 0.13 | 173.97 | 0.04 | |
| Carp | 43196 | Max WS | 16.16 | 92.01 | 94.02 | 94.02 | 0.14 | 208.96 | 0.04 | |
| Carp | 43180.6 | Max WS | 16.16 | 92.01 | 94.02 | 94.02 | 0.14 | 236.67 | 0.04 | |
| Carp | 43173 | Max WS | 16.16 | 92.01 | 94.02 | 94.02 | 0.12 | 291.19 | 0.03 | |
| Carp | 43163.8 | Max WS | 30.97 | 92.01 | 94.02 | 94.02 | 0.31 | 215.61 | 0.09 | |
| Carp | 43136.4 | Max WS | 30.97 | 92.01 | 94.02 | 94.02 | 0.31 | 225.21 | 0.09 | |
| Carp | 43131.8 | Max WS | 30.97 | 92.01 | 94.02 | 94.02 | 0.31 | 217.16 | 0.09 | |
| Carp | 43113.6 | Max WS | 30.97 | 92 | 94.02 | 94.02 | 0.31 | 223.06 | 0.1 | |
| Carp | 43100 | Max WS | 30.97 | 92 | 94.01 | 94.02 | 0.3 | 231.37 | 0.1 | |
| Carp | 43072 | Max WS | 30.96 | 92 | 94.01 | 94.01 | 0.24 | 252.64 | 0.08 | |
| Carp | 43028.3 | Max WS | 30.99 | 91.96 | 94.01 | 94.01 | 0.26 | 233.61 | 0.09 | |
| Carp | 43018.6 | Max WS | 30.99 | 91.96 | 94 | 94.01 | 0.27 | 227.59 | 0.09 | |
| Carp | 42975 | Max WS | 30.98 | 91.92 | 94 | 94 | 0.3 | 202.94 | 0.09 | |
| Carp | 42970.1 | Max WS | 30.98 | 91.92 | 94 | 94 | 0.38 | 210.33 | 0.09 | |
| Carp | 42951.2 | Max WS | 31.35 | 91.91 | 94 | 94 | 0.35 | 205.5 | 0.09 | |
| Carp | 42918.2 | Max WS | 31.35 | 91.91 | 93.99 | 94 | 0.34 | 218.62 | 0.09 | |
| Carp | 42913.5 | Max WS | 31.35 | 91.91 | 93.99 | 94 | 0.34 | 221.09 | 0.09 | |
| Carp | 42904.1 | Max WS | 31.34 | 91.9 | 93.99 | 94 | 0.35 | 182.42 | 0.1 | |
| Carp | 42890 | Max WS | 31.33 | 91.9 | 93.98 | 94 | 0.72 | 149.32 | 0.22 | |
| Carp | 42889 | Max WS | 31.33 | 91.8 | 93.95 | 93.18 | 94.01 | 1.23 | 268.31 | 0.28 |
| Carp | 42885 | Palladium Driv Bridge | | | | | | | | |
| Carp | 42855 | Max WS | 31.29 | 91.85 | 93.9 | 93.96 | 1.12 | 218.97 | 0.3 | |
| Carp | 42716 | Max WS | 31.31 | 91.75 | 93.91 | 93.91 | 0.38 | 159.44 | 0.1 | |
| Carp | 42700.9 | Max WS | 31.31 | 91.74 | 93.91 | 93.91 | 0.4 | 152.31 | 0.11 | |
| Carp | 42686 | Max WS | 31.31 | 91.73 | 93.9 | 93.91 | 0.42 | 138.04 | 0.11 | |
| Carp | 42558 | Max WS | 31.31 | 91.71 | 93.88 | 93.89 | 0.49 | 114.19 | 0.14 | |
| Carp | 42548.4 | Max WS | 32.18 | 91.7 | 93.87 | 93.88 | 0.51 | 115.99 | 0.14 | |
| Carp | 42410 | Max WS | 32.16 | 91.6 | 93.83 | 93.85 | 0.95 | 83 | 0.21 | |
| Carp | 42391.5 | Max WS | 32.16 | 91.59 | 93.82 | 93.84 | 0.96 | 79.77 | 0.21 | |
| Carp | 42212 | Max WS | 32.1 | 91.52 | 93.76 | 93.77 | 0.73 | 85.5 | 0.16 | |
| Carp | 42182 | Max WS | 31.99 | 91.51 | 93.67 | 93.07 | 93.78 | 1.49 | 97.1 | 0.41 |
| Carp | 42172 | Highway 417 S Bridge | | | | | | | | |
| Carp | 42154 | Max WS | 31.88 | 91.24 | 93.62 | 93.73 | 1.45 | 79.88 | 0.4 | |
| Carp | 42134 | Max WS | 31.98 | 91.51 | 93.66 | 93.71 | 0.99 | 86.87 | 0.27 | |
| Carp | 42124 | Max WS | 31.7 | 91.36 | 93.57 | 93.02 | 93.69 | 1.53 | 71.69 | 0.43 |
| Carp | 42119 | Highway 417 N Bridge | | | | | | | | |
| Carp | 42097 | Max WS | 31.6 | 91.49 | 93.55 | 93.65 | 1.36 | 46.67 | 0.35 | |
| Carp | 42075 | Max WS | 31.77 | 91.48 | 93.59 | 93.59 | 0.26 | 105.3 | 0.07 | |
| Carp | 42036 | Max WS | 31.77 | 91.47 | 93.59 | 93.59 | 0.22 | 153.68 | 0.06 | |
| Carp | 42002 | Max WS | 31.74 | 91.46 | 93.59 | 93.59 | 0.23 | 161.41 | 0.06 | |
| Carp | 41997.6 | Max WS | 31.81 | 91.46 | 93.59 | 93.59 | 0.25 | 154.9 | 0.07 | |
| Carp | 41970.1 | Max WS | 31.83 | 91.44 | 93.59 | 93.59 | 0.22 | 149.78 | 0.06 | |
| Carp | 41948.9 | Max WS | 31.84 | 91.44 | 93.59 | 93.59 | 0.28 | 186.78 | 0.08 | |
| Carp | 41896 | Max WS | 31.83 | 91.42 | 93.58 | 93.59 | 0.31 | 187.23 | 0.07 | |
| Carp | 41845.2 | Max WS | 31.82 | 91.4 | 93.58 | 93.58 | 0.31 | 153.1 | 0.08 | |
| Carp | 41836 | Max WS | 31.82 | 91.4 | 93.58 | 93.58 | 0.42 | 129.79 | 0.11 | |
| Carp | 41776 | Max WS | 31.8 | 91.38 | 93.57 | 93.58 | 0.5 | 152.15 | 0.12 | |
| Carp | 41769 | Max WS | 31.81 | 91.38 | 93.57 | 93.57 | 0.47 | 151.51 | 0.12 | |
| Carp | 41744 | Max WS | 31.83 | 91.36 | 93.57 | 93.57 | 0.26 | 155.62 | 0.08 | |

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|------|------------------------------|-------|-------|-------|-------|-------|------|--------|------|
| Carp | 41743 Max WS | 31.72 | 91.36 | 93.54 | 92.69 | 93.59 | 1.08 | 163.2 | 0.28 |
| Carp | 41738 Fut Transitway Bridge | | | | | | | | |
| Carp | 41725.5 Max WS | 31.79 | 91.35 | 93.55 | | 93.58 | 0.72 | 192.48 | 0.17 |
| Carp | 41671 Max WS | 31.79 | 91.35 | 93.56 | | 93.57 | 0.49 | 102.48 | 0.13 |
| Carp | 41608 Max WS | 39.19 | 91.32 | 93.53 | 92.25 | 93.56 | 0.75 | 110.1 | 0.17 |
| Carp | 41602 Future Campe Bridge | | | | | | | | |
| Carp | 41572 Max WS | 38.72 | 91.31 | 93.49 | | 93.52 | 0.75 | 110.1 | 0.18 |
| Carp | 41374.8 Max WS | 37.39 | 91.26 | 93.41 | | 93.49 | 1.59 | 110.6 | 0.39 |
| Carp | 41357 Max WS | 37.44 | 91.26 | 93.41 | | 93.43 | 0.9 | 264.46 | 0.32 |
| Carp | 41349.4 Max WS | 37.7 | 91.25 | 93.42 | | 93.42 | 0.13 | 331.76 | 0.05 |
| Carp | 41338 Max WS | 37.7 | 91.24 | 93.42 | | 93.42 | 0.13 | 302.97 | 0.04 |
| Carp | 41320 Max WS | 37.66 | 91.24 | 93.42 | | 93.42 | 0.15 | 314.41 | 0.03 |
| Carp | 41198 Max WS | 37.64 | 91.21 | 93.42 | | 93.42 | 0.18 | 247.34 | 0.04 |
| Carp | 41180 Max WS | 37.67 | 91.21 | 93.41 | | 93.42 | 0.15 | 216.36 | 0.04 |
| Carp | 41125.4 Max WS | 37.64 | 91.21 | 93.41 | | 93.41 | 0.22 | 342.1 | 0.05 |
| Carp | 41117 Max WS | 37.62 | 91.2 | 93.41 | | 93.42 | 0.46 | 342.48 | 0.13 |
| Carp | 41071 Max WS | 37.94 | 91.18 | 93.41 | | 93.41 | 0.16 | 353.98 | 0.04 |
| Carp | 40965.2 Max WS | 37.92 | 91.14 | 93.41 | | 93.41 | 0.18 | 336.87 | 0.05 |
| Carp | 40956 Max WS | 37.93 | 91.14 | 93.41 | | 93.41 | 0.25 | 180.1 | 0.06 |
| Carp | 40919.2 Max WS | 37.92 | 91.12 | 93.41 | | 93.41 | 0.35 | 191.47 | 0.09 |
| Carp | 40910 Max WS | 37.89 | 91.12 | 93.41 | | 93.41 | 0.13 | 208.2 | 0.03 |
| Carp | 40703 Max WS | 37.91 | 91.05 | 93.4 | | 93.41 | 0.16 | 200.76 | 0.04 |
| Carp | 40688.5 Max WS | 38.53 | 91.04 | 93.4 | | 93.41 | 0.43 | 190.56 | 0.11 |
| Carp | 40640.2 Max WS | 38.51 | 91.03 | 93.4 | | 93.4 | 0.29 | 319.12 | 0.07 |
| Carp | 40505 Max WS | 38.49 | 91 | 93.39 | | 93.4 | 0.25 | 257.5 | 0.06 |
| Carp | 40423.5 Max WS | 38.45 | 90.97 | 93.39 | | 93.39 | 0.21 | 300.2 | 0.05 |
| Carp | 40415 Max WS | 38.47 | 90.96 | 93.39 | | 93.39 | 0.19 | 372.21 | 0.04 |
| Carp | 40348.1 Max WS | 38.47 | 90.95 | 93.39 | | 93.39 | 0.17 | 346.32 | 0.04 |
| Carp | 40339.7 Max WS | 38.47 | 90.95 | 93.39 | | 93.39 | 0.1 | 343.66 | 0.02 |
| Carp | 40298 Max WS | 38.48 | 90.93 | 93.39 | | 93.39 | 0.11 | 404.33 | 0.03 |
| Carp | 40262.9 Max WS | 38.9 | 90.92 | 93.39 | | 93.39 | 0.13 | 382.4 | 0.03 |
| Carp | 40113.9 Max WS | 38.85 | 90.88 | 93.39 | | 93.39 | 0.25 | 306.12 | 0.06 |
| Carp | 40092 Max WS | 38.86 | 90.87 | 93.38 | | 93.39 | 0.34 | 300.96 | 0.07 |
| Carp | 40077.6 Max WS | 39.04 | 91.07 | 93.33 | | 93.39 | 1.13 | 289.73 | 0.27 |
| Carp | 40071.5 Max WS | 37.34 | 91.15 | 93.19 | | 93.36 | 1.84 | 220.76 | 0.45 |
| Carp | 40070 Richardson Sic Culvert | | | | | | | | |
| Carp | 40050 Max WS | 38.01 | 91.15 | 93.22 | | 93.37 | 1.7 | 200.02 | 0.4 |
| Carp | 40035.1 Max WS | 38.6 | 91.13 | 93.27 | | 93.27 | 0.41 | 256.97 | 0.1 |
| Carp | 39892 Max WS | 38.39 | 90.99 | 93.25 | | 93.25 | 0.46 | 210.58 | 0.11 |
| Carp | 39695 Max WS | 38.11 | 90.78 | 93.22 | | 93.22 | 0.42 | 223.42 | 0.11 |
| Carp | 39400 Max WS | 37.79 | 90.66 | 93.18 | | 93.18 | 0.4 | 332.46 | 0.09 |
| Carp | 39202 Max WS | 37.69 | 90.57 | 93.16 | | 93.17 | 0.27 | 379.48 | 0.06 |
| Carp | 39102 Max WS | 37.69 | 90.47 | 93.16 | | 93.16 | 0.24 | 519.38 | 0.05 |
| Carp | 39002 Max WS | 37.66 | 90.37 | 93.16 | | 93.16 | 0.25 | 485.6 | 0.05 |
| Carp | 38902 Max WS | 37.66 | 90.27 | 93.15 | | 93.16 | 0.23 | 419.84 | 0.05 |
| Carp | 38697 Max WS | 37.66 | 90.07 | 93.15 | | 93.15 | 0.16 | 455.34 | 0.03 |
| Carp | 38692.5 Max WS | 37.88 | 90.07 | 93.15 | | 93.15 | 0.14 | 445 | 0.03 |
| Carp | 38236 Max WS | 37.86 | 90.16 | 93.14 | | 93.14 | 0.24 | 400.34 | 0.05 |
| Carp | 37894 Max WS | 56.09 | 90.03 | 93.12 | | 93.12 | 0.3 | 403.5 | 0.06 |
| Carp | 37869.5 Max WS | 56.09 | 90.01 | 93.12 | | 93.12 | 0.3 | 406.42 | 0.06 |
| Carp | 37390.4 Max WS | 56.06 | 89.68 | 93.1 | | 93.11 | 0.25 | 458.58 | 0.05 |
| Carp | 37380.4 Max WS | 56.03 | 89.67 | 93.07 | 91.49 | 93.21 | 1.68 | 454.26 | 0.31 |

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|------|---------|------------|--------|-------|-------|-------|-------|--------|--------|------|
| Carp | 37370 | Huntmar | Bridge | | | | | | | |
| Carp | 37355.4 | Max WS | 54.82 | 89.66 | 92.86 | 93.02 | 1.78 | 423.9 | 0.34 | |
| Carp | 37101 | Max WS | 55.07 | 89.48 | 92.88 | 92.88 | 0.28 | 428.69 | 0.05 | |
| Carp | 36580 | Max WS | 54.97 | 89.1 | 92.87 | 92.87 | 0.22 | 412.44 | 0.04 | |
| Carp | 35288 | Max WS | 54.89 | 89.05 | 92.83 | 92.83 | 0.42 | 345.34 | 0.07 | |
| Carp | 35073 | Max WS | 54.89 | 89.27 | 92.8 | 92.81 | 0.55 | 265.13 | 0.1 | |
| Carp | 34555 | Max WS | 54.88 | 89.06 | 92.73 | 92.75 | 0.7 | 198.26 | 0.12 | |
| Carp | 33472 | Max WS | 54.92 | 88.54 | 92.66 | 92.66 | 0.35 | 282.96 | 0.06 | |
| Carp | 33201 | Max WS | 56.09 | 89.15 | 92.6 | 90.56 | 92.65 | 0.98 | 367.06 | 0.18 |
| Carp | 33197 | March Road | Bridge | | | | | | | |
| Carp | 33181 | Max WS | 56.09 | 89.16 | 92.58 | 92.63 | 0.99 | 365.79 | 0.18 | |
| Carp | 32609 | Max WS | 56.07 | 89.56 | 92.57 | 92.57 | 0.29 | 379.41 | 0.05 | |
| Carp | 32096 | Max WS | 56.05 | 88.9 | 92.56 | 92.56 | 0.23 | 390.48 | 0.04 | |
| Carp | 31662 | Max WS | 55.24 | 88.74 | 92.51 | 90.29 | 92.54 | 0.92 | 154.1 | 0.15 |
| Carp | 31658 | Carp Road | Bridge | | | | | | | |
| Carp | 31642 | Max WS | 52.71 | 88.74 | 92.51 | 92.53 | 0.88 | 151 | 0.15 | |
| Carp | 31414 | Max WS | -81.21 | 88.89 | 92.5 | 90.95 | 92.51 | -0.6 | 247.33 | 0.11 |

Future Condition with Normal Depth Condition

Future 2 year with Normal Depth Condition

HEC-RAS Plan: F2w3.8nHFFTC River: Carp River Reach: Carp Profile: Max WS

| Reach | River Sta | Profile | Q Total (m3/s) | Min Ch El (m) | W.S. Elev (m) | Crit W.S. (m) | E.G. Elev (m) | Vel Chnl (m/s) | Top Width (m) | Froude # | Chl |
|-------|-----------|----------------------|-------------------|------------------|------------------|------------------|------------------|-------------------|------------------|----------|------|
| Carp | 44953 | Max WS | 3.59 | 92.75 | 93.92 | | 93.92 | 0.26 | 34.35 | | 0.1 |
| Carp | 44890 | Max WS | 3.59 | 92.63 | 93.89 | | 93.89 | 0.41 | 35.94 | | 0.16 |
| Carp | 44751 | Max WS | 3.58 | 92.38 | 93.83 | | 93.83 | 0.28 | 15.31 | | 0.1 |
| Carp | 44548 | Max WS | 5.15 | 92.43 | 93.75 | | 93.75 | 0.24 | 91.46 | | 0.08 |
| Carp | 44325 | Max WS | 5.2 | 92.12 | 93.67 | 92.88 | 93.67 | 0.38 | 41.7 | | 0.11 |
| Carp | 44324 | Hazeldean Cul Bridge | | | | | | | | | |
| Carp | 44302 | Max WS | 5.08 | 92.45 | 93.61 | | 93.62 | 0.57 | 45.38 | | 0.22 |
| Carp | 44267.4 | Max WS | 5.05 | 92.44 | 93.59 | | 93.6 | 0.47 | 80.56 | | 0.18 |
| Carp | 44218 | Max WS | 5.02 | 92.43 | 93.58 | | 93.59 | 0.22 | 147.56 | | 0.08 |
| Carp | 44193 | Max WS | 5.02 | 92.41 | 93.58 | | 93.58 | 0.17 | 141.06 | | 0.06 |
| Carp | 44153 | Max WS | 5.02 | 92.4 | 93.58 | | 93.58 | 0.13 | 129.08 | | 0.05 |
| Carp | 44093 | Max WS | 5.01 | 92.4 | 93.58 | | 93.58 | 0.11 | 116.89 | | 0.05 |
| Carp | 44068 | Max WS | 4.99 | 92.39 | 93.58 | | 93.58 | 0.1 | 142.31 | | 0.04 |
| Carp | 44044.2 | Max WS | 4.99 | 92.38 | 93.58 | | 93.58 | 0.12 | 143.02 | | 0.05 |
| Carp | 44020.4 | Max WS | 4.99 | 92.35 | 93.58 | | 93.58 | 0.11 | 138.94 | | 0.04 |
| Carp | 44013.6 | Max WS | 4.99 | 92.35 | 93.58 | | 93.58 | 0.09 | 130.76 | | 0.04 |
| Carp | 43993.2 | Max WS | 4.99 | 92.34 | 93.58 | | 93.58 | 0.11 | 142.05 | | 0.05 |
| Carp | 43966 | Max WS | 4.99 | 92.33 | 93.57 | | 93.58 | 0.14 | 115.9 | | 0.06 |
| Carp | 43954 | Max WS | 5.31 | 92.33 | 93.57 | | 93.57 | 0.1 | 141.2 | | 0.04 |
| Carp | 43946 | Max WS | 5.31 | 92.32 | 93.57 | | 93.57 | 0.12 | 144.08 | | 0.04 |
| Carp | 43938 | Max WS | 5.31 | 92.31 | 93.57 | | 93.57 | 0.09 | 146.17 | | 0.03 |
| Carp | 43852 | Max WS | 5.3 | 92.2 | 93.57 | | 93.57 | 0.31 | 138.19 | | 0.11 |
| Carp | 43822 | Max WS | 5.3 | 92.22 | 93.57 | | 93.57 | 0.14 | 126.95 | | 0.05 |
| Carp | 43813 | Max WS | 5.3 | 92.22 | 93.57 | | 93.57 | 0.24 | 93.59 | | 0.09 |
| Carp | 43799.6 | Max WS | 5.3 | 92.22 | 93.56 | | 93.57 | 0.21 | 99.96 | | 0.08 |
| Carp | 43764 | Max WS | 5.3 | 92.21 | 93.56 | | 93.56 | 0.15 | 153.21 | | 0.06 |
| Carp | 43745.8 | Max WS | 5.36 | 92.21 | 93.56 | | 93.56 | 0.15 | 153.21 | | 0.06 |
| Carp | 43645.7 | Max WS | 5.35 | 92.2 | 93.56 | | 93.56 | 0.14 | 127.73 | | 0.05 |
| Carp | 43582 | Max WS | 5.35 | 92.17 | 93.56 | | 93.56 | 0.13 | 133.29 | | 0.04 |
| Carp | 43572.4 | Max WS | 5.35 | 92.17 | 93.56 | | 93.56 | 0.15 | 105.21 | | 0.05 |
| Carp | 43524.2 | Max WS | 5.67 | 92.15 | 93.55 | | 93.55 | 0.19 | 98.69 | | 0.06 |
| Carp | 43519.4 | Max WS | 5.67 | 92.15 | 93.55 | | 93.55 | 0.19 | 95.35 | | 0.06 |
| Carp | 43375 | Max WS | 5.66 | 92.09 | 93.53 | 92.71 | 93.54 | 0.47 | 71.24 | | 0.17 |
| Carp | 43370 | Maple Gr. Upg Bridge | | | | | | | | | |
| Carp | 43364 | Max WS | 5.66 | 92.08 | 93.51 | | 93.52 | 0.51 | 21.25 | | 0.18 |
| Carp | 43223 | Max WS | 5.65 | 92.01 | 93.49 | | 93.49 | 0.08 | 116.26 | | 0.03 |
| Carp | 43215.2 | Max WS | 5.66 | 92.01 | 93.49 | | 93.49 | 0.08 | 116.76 | | 0.03 |
| Carp | 43199.8 | Max WS | 5.66 | 92.01 | 93.49 | | 93.49 | 0.08 | 133.9 | | 0.03 |
| Carp | 43196 | Max WS | 5.66 | 92.01 | 93.49 | | 93.49 | 0.08 | 133.75 | | 0.03 |
| Carp | 43180.6 | Max WS | 5.66 | 92.01 | 93.49 | | 93.49 | 0.08 | 142.97 | | 0.03 |
| Carp | 43173 | Max WS | 5.65 | 92.01 | 93.49 | | 93.49 | 0.07 | 241.42 | | 0.03 |
| Carp | 43163.8 | Max WS | 9.1 | 92.01 | 93.49 | | 93.49 | 0.17 | 173.82 | | 0.06 |
| Carp | 43136.4 | Max WS | 9.09 | 92.01 | 93.49 | | 93.49 | 0.16 | 103.09 | | 0.06 |
| Carp | 43131.8 | Max WS | 9.09 | 92.01 | 93.49 | | 93.49 | 0.16 | 102.94 | | 0.07 |
| Carp | 43113.6 | Max WS | 9.09 | 92 | 93.49 | | 93.49 | 0.16 | 104.93 | | 0.07 |
| Carp | 43100 | Max WS | 9.09 | 92 | 93.49 | | 93.49 | 0.16 | 109.22 | | 0.07 |

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|------|-----------------------------|-------|-------|-------|-------|-------|------|--------|------|
| Carp | 43072 Max WS | 9.09 | 92 | 93.47 | | 93.49 | 0.61 | 104.42 | 0.28 |
| Carp | 43028.3 Max WS | 9.09 | 91.96 | 93.41 | | 93.43 | 0.67 | 94.83 | 0.28 |
| Carp | 43018.6 Max WS | 9.09 | 91.96 | 93.4 | | 93.42 | 0.68 | 92.85 | 0.28 |
| Carp | 42975 Max WS | 9.09 | 91.92 | 93.34 | | 93.37 | 0.78 | 84.26 | 0.3 |
| Carp | 42970.1 Max WS | 9.09 | 91.92 | 93.33 | | 93.37 | 0.92 | 107.54 | 0.27 |
| Carp | 42951.2 Max WS | 9.35 | 91.91 | 93.32 | | 93.35 | 0.71 | 106 | 0.23 |
| Carp | 42918.2 Max WS | 9.35 | 91.91 | 93.3 | | 93.32 | 0.66 | 90.82 | 0.25 |
| Carp | 42913.5 Max WS | 9.34 | 91.91 | 93.3 | | 93.32 | 0.67 | 85.88 | 0.27 |
| Carp | 42904.1 Max WS | 9.34 | 91.9 | 93.28 | | 93.31 | 0.71 | 80.04 | 0.29 |
| Carp | 42890 Max WS | 9.34 | 91.9 | 93.26 | | 93.29 | 0.75 | 71.32 | 0.31 |
| Carp | 42889 Max WS | 9.34 | 91.8 | 93.27 | 92.52 | 93.29 | 0.72 | 162.55 | 0.2 |
| Carp | 42885 Palladium Driv Bridge | | | | | | | | |
| Carp | 42855 Max WS | 9.32 | 91.85 | 93.24 | | 93.26 | 0.63 | 202.7 | 0.24 |
| Carp | 42716 Max WS | 9.33 | 91.75 | 93.22 | | 93.22 | 0.31 | 121.57 | 0.12 |
| Carp | 42700.9 Max WS | 9.33 | 91.74 | 93.22 | | 93.22 | 0.31 | 113.39 | 0.12 |
| Carp | 42686 Max WS | 9.33 | 91.73 | 93.21 | | 93.22 | 0.32 | 101.34 | 0.12 |
| Carp | 42558 Max WS | 9.33 | 91.71 | 93.17 | | 93.18 | 0.41 | 64.26 | 0.17 |
| Carp | 42548.4 Max WS | 9.63 | 91.7 | 93.17 | | 93.18 | 0.37 | 63.7 | 0.15 |
| Carp | 42410 Max WS | 9.63 | 91.6 | 93.13 | | 93.15 | 0.71 | 64.97 | 0.19 |
| Carp | 42391.5 Max WS | 9.63 | 91.59 | 93.12 | | 93.14 | 0.7 | 62.27 | 0.19 |
| Carp | 42212 Max WS | 9.63 | 91.52 | 93.06 | | 93.07 | 0.5 | 77.31 | 0.14 |
| Carp | 42182 Max WS | 9.61 | 91.51 | 93.01 | 92.47 | 93.05 | 0.88 | 17.37 | 0.34 |
| Carp | 42172 Highway 417 S Bridge | | | | | | | | |
| Carp | 42154 Max WS | 9.6 | 91.24 | 92.98 | | 93.01 | 0.82 | 15.86 | 0.3 |
| Carp | 42134 Max WS | 9.6 | 91.51 | 92.98 | | 92.99 | 0.59 | 20.88 | 0.2 |
| Carp | 42124 Max WS | 9.59 | 91.36 | 92.94 | 92.37 | 92.99 | 0.9 | 14.81 | 0.33 |
| Carp | 42119 Highway 417 N Bridge | | | | | | | | |
| Carp | 42097 Max WS | 9.59 | 91.49 | 92.93 | | 92.96 | 0.69 | 15.35 | 0.22 |
| Carp | 42075 Max WS | 9.59 | 91.48 | 92.94 | | 92.94 | 0.16 | 103.55 | 0.05 |
| Carp | 42036 Max WS | 9.58 | 91.47 | 92.93 | | 92.93 | 0.34 | 136.57 | 0.15 |
| Carp | 42002 Max WS | 9.58 | 91.46 | 92.92 | | 92.92 | 0.35 | 131.92 | 0.13 |
| Carp | 41997.6 Max WS | 9.6 | 91.46 | 92.92 | | 92.93 | 0.39 | 127.73 | 0.14 |
| Carp | 41970.1 Max WS | 9.6 | 91.44 | 92.92 | | 92.92 | 0.15 | 130.07 | 0.06 |
| Carp | 41948.9 Max WS | 9.74 | 91.44 | 92.91 | | 92.91 | 0.24 | 107.44 | 0.09 |
| Carp | 41896 Max WS | 9.73 | 91.42 | 92.9 | | 92.91 | 0.57 | 114.83 | 0.16 |
| Carp | 41845.2 Max WS | 9.73 | 91.4 | 92.88 | | 92.89 | 0.5 | 86.45 | 0.17 |
| Carp | 41836 Max WS | 9.73 | 91.4 | 92.88 | | 92.89 | 0.33 | 116.34 | 0.11 |
| Carp | 41776 Max WS | 9.72 | 91.38 | 92.87 | | 92.88 | 0.51 | 118.96 | 0.16 |
| Carp | 41769 Max WS | 9.72 | 91.38 | 92.87 | | 92.87 | 0.4 | 105.6 | 0.13 |
| Carp | 41744 Max WS | 9.73 | 91.36 | 92.87 | | 92.87 | 0.21 | 116.62 | 0.1 |
| Carp | 41743 Max WS | 9.73 | 91.36 | 92.85 | 92.08 | 92.87 | 0.62 | 108.69 | 0.21 |
| Carp | 41738 Fut Transitway Bridge | | | | | | | | |
| Carp | 41725.5 Max WS | 9.73 | 91.35 | 92.86 | | 92.86 | 0.34 | 142.15 | 0.1 |
| Carp | 41671 Max WS | 9.73 | 91.35 | 92.85 | | 92.86 | 0.4 | 84.58 | 0.14 |
| Carp | 41608 Max WS | 11.13 | 91.32 | 92.84 | 91.91 | 92.85 | 0.34 | 106.37 | 0.1 |
| Carp | 41602 Future Campe Bridge | | | | | | | | |
| Carp | 41572 Max WS | 11.11 | 91.31 | 92.83 | | 92.84 | 0.34 | 110.1 | 0.1 |
| Carp | 41374.8 Max WS | 10.99 | 91.26 | 92.73 | | 92.8 | 1.22 | 16.73 | 0.38 |
| Carp | 41357 Max WS | 10.72 | 91.26 | 92.68 | | 92.76 | 1.25 | 12.85 | 0.49 |
| Carp | 41349.4 Max WS | 10.65 | 91.25 | 92.66 | | 92.73 | 1.18 | 156.43 | 0.48 |
| Carp | 41338 Max WS | 10.6 | 91.24 | 92.66 | | 92.66 | 0.08 | 195.98 | 0.04 |
| Carp | 41320 Max WS | 10.6 | 91.24 | 92.66 | | 92.66 | 0.1 | 233.39 | 0.03 |

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|------|---------|------------------------|-------|-------|-------|-------|------|--------|------|------|
| Carp | 41198 | Max WS | 10.61 | 91.21 | 92.66 | 92.66 | 0.11 | 197.51 | 0.04 | |
| Carp | 41180 | Max WS | 10.61 | 91.21 | 92.66 | 92.66 | 0.09 | 210.63 | 0.03 | |
| Carp | 41125.4 | Max WS | 10.62 | 91.21 | 92.65 | 92.66 | 0.54 | 193.79 | 0.15 | |
| Carp | 41117 | Max WS | 10.58 | 91.2 | 92.65 | 92.66 | 0.4 | 189.09 | 0.16 | |
| Carp | 41071 | Max WS | 10.5 | 91.18 | 92.63 | 92.64 | 0.43 | 181.5 | 0.17 | |
| Carp | 40965.2 | Max WS | 10.7 | 91.14 | 92.62 | 92.62 | 0.11 | 170.42 | 0.04 | |
| Carp | 40956 | Max WS | 10.66 | 91.14 | 92.62 | 92.63 | 0.48 | 169.64 | 0.18 | |
| Carp | 40919.2 | Max WS | 10.67 | 91.12 | 92.61 | 92.62 | 0.31 | 145.33 | 0.1 | |
| Carp | 40910 | Max WS | 10.67 | 91.12 | 92.62 | 92.62 | 0.07 | 197.31 | 0.02 | |
| Carp | 40703 | Max WS | 10.68 | 91.05 | 92.61 | 92.61 | 0.07 | 154.85 | 0.02 | |
| Carp | 40688.5 | Max WS | 10.83 | 91.04 | 92.61 | 92.62 | 0.4 | 129.08 | 0.13 | |
| Carp | 40640.2 | Max WS | 10.8 | 91.03 | 92.6 | 92.61 | 0.32 | 244.45 | 0.11 | |
| Carp | 40505 | Max WS | 10.78 | 91 | 92.59 | 92.59 | 0.21 | 251.46 | 0.07 | |
| Carp | 40423.5 | Max WS | 10.78 | 90.97 | 92.59 | 92.59 | 0.18 | 292.01 | 0.05 | |
| Carp | 40415 | Max WS | 10.78 | 90.96 | 92.59 | 92.59 | 0.16 | 276.62 | 0.05 | |
| Carp | 40348.1 | Max WS | 10.78 | 90.95 | 92.59 | 92.59 | 0.13 | 282.65 | 0.04 | |
| Carp | 40339.7 | Max WS | 10.78 | 90.95 | 92.59 | 92.59 | 0.05 | 280.52 | 0.02 | |
| Carp | 40298 | Max WS | 10.78 | 90.93 | 92.59 | 92.59 | 0.05 | 274.72 | 0.02 | |
| Carp | 40262.9 | Max WS | 11.21 | 90.92 | 92.59 | 92.59 | 0.07 | 263.54 | 0.02 | |
| Carp | 40113.9 | Max WS | 11.2 | 90.88 | 92.57 | 92.58 | 0.32 | 172.35 | 0.09 | |
| Carp | 40092 | Max WS | 11.2 | 90.87 | 92.57 | 92.58 | 0.33 | 161.34 | 0.09 | |
| Carp | 40077.6 | Max WS | 11.32 | 91.07 | 92.55 | 92.57 | 0.61 | 160.69 | 0.19 | |
| Carp | 40071.5 | Max WS | 11.32 | 91.15 | 92.52 | 92.56 | 0.93 | 175.39 | 0.29 | |
| Carp | 40070 | Richardson Sic Culvert | | | | | | | | |
| Carp | 40050 | Max WS | 11.31 | 91.15 | 92.53 | 92.56 | 0.8 | 142.23 | 0.24 | |
| Carp | 40035.1 | Max WS | 11.32 | 91.13 | 92.54 | 92.55 | 0.49 | 138.91 | 0.16 | |
| Carp | 39892 | Max WS | 11.31 | 90.99 | 92.49 | 92.5 | 0.36 | 43.9 | 0.12 | |
| Carp | 39695 | Max WS | 11.3 | 90.78 | 92.43 | 92.44 | 0.42 | 49.05 | 0.15 | |
| Carp | 39400 | Max WS | 11.29 | 90.66 | 92.33 | 92.35 | 0.49 | 57.99 | 0.14 | |
| Carp | 39202 | Max WS | 11.28 | 90.57 | 92.28 | 92.29 | 0.47 | 64.92 | 0.13 | |
| Carp | 39102 | Max WS | 11.28 | 90.47 | 92.25 | 92.26 | 0.56 | 82.85 | 0.16 | |
| Carp | 39002 | Max WS | 11.27 | 90.37 | 92.2 | 92.22 | 0.62 | 154.96 | 0.17 | |
| Carp | 38902 | Max WS | 11.27 | 90.27 | 92.17 | 92.18 | 0.54 | 206.71 | 0.15 | |
| Carp | 38697 | Max WS | 11.26 | 90.07 | 92.14 | 92.14 | 0.23 | 261.88 | 0.06 | |
| Carp | 38692.5 | Max WS | 11.3 | 90.07 | 92.14 | 92.14 | 0.23 | 261.1 | 0.07 | |
| Carp | 38236 | Max WS | 11.21 | 90.16 | 92.05 | 92.07 | 0.64 | 150.85 | 0.16 | |
| Carp | 37894 | Max WS | 15.54 | 90.03 | 91.89 | 91.9 | 0.55 | 117.86 | 0.15 | |
| Carp | 37869.5 | Max WS | 15.54 | 90.01 | 91.88 | 91.9 | 0.54 | 120.15 | 0.15 | |
| Carp | 37390.4 | Max WS | 15.17 | 89.68 | 91.77 | 91.78 | 0.43 | 229.79 | 0.11 | |
| Carp | 37380.4 | Max WS | 15.09 | 89.67 | 91.75 | 91.75 | 0.83 | 227.64 | 0.21 | |
| Carp | 37370 | Huntmar Bridge | | | | | | | | |
| Carp | 37355.4 | Max WS | 14.86 | 89.66 | 91.72 | 91.75 | 0.83 | 222.77 | 0.21 | |
| Carp | 37101 | Max WS | 14.74 | 89.48 | 91.7 | 91.7 | 0.33 | 239.6 | 0.08 | |
| Carp | 36580 | Max WS | 14.54 | 89.1 | 91.65 | 91.65 | 0.37 | 312.18 | 0.08 | |
| Carp | 35288 | Max WS | 14.37 | 89.05 | 91.43 | 91.45 | 0.57 | 77.42 | 0.13 | |
| Carp | 35073 | Max WS | 14.36 | 89.27 | 91.4 | 91.41 | 0.42 | 66.43 | 0.1 | |
| Carp | 34555 | Max WS | 14.33 | 89.06 | 91.31 | 91.32 | 0.52 | 29.87 | 0.12 | |
| Carp | 33472 | Max WS | 14.35 | 88.54 | 91.22 | 91.22 | 0.27 | 68.7 | 0.05 | |
| Carp | 33201 | Max WS | 14.57 | 89.15 | 91.18 | 89.85 | 91.2 | 0.5 | 22.5 | 0.13 |
| Carp | 33197 | March Road Bridge | | | | | | | | |
| Carp | 33181 | Max WS | 14.57 | 89.16 | 91.17 | 91.19 | 0.51 | 23.27 | 0.13 | |
| Carp | 32609 | Max WS | 14.56 | 89.56 | 91.03 | 91.04 | 0.51 | 90.24 | 0.14 | |

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|------|-------|------------------|-------|-------|-------|-------|-------|------|--------|------|
| Carp | 32096 | Max WS | 14.55 | 88.9 | 90.88 | | 90.89 | 0.55 | 131.04 | 0.15 |
| Carp | 31662 | Max WS | 14.61 | 88.74 | 90.76 | 89.52 | 90.77 | 0.59 | 75.41 | 0.14 |
| Carp | 31658 | Carp Road Bridge | | | | | | | | |
| Carp | 31642 | Max WS | 14.6 | 88.74 | 90.75 | | 90.76 | 0.6 | 72.74 | 0.14 |
| Carp | 31414 | Max WS | 15.69 | 88.89 | 90.59 | 89.83 | 90.63 | 0.94 | 64.27 | 0.26 |

Future 5 year with Normal Depth Condition

HEC-RAS Plan: F5w3.8nHFETc River: Carp River Reach: Carp Profile: Max WS

| Reach | River Sta | Profile | Q Total (m3/s) | Min Ch El (m) | W.S. Elev (m) | Crit W.S. (m) | E.G. Elev (m) | Vel Chnl (m/s) | Top Width (m) | Froude # | Chl |
|-------|-----------|----------------------|-------------------|------------------|------------------|------------------|------------------|-------------------|------------------|----------|------|
| Carp | 44953 | Max WS | 5.36 | 92.75 | 94.11 | | 94.12 | 0.28 | 50.71 | | 0.1 |
| Carp | 44890 | Max WS | 5.36 | 92.63 | 94.08 | | 94.09 | 0.38 | 82.05 | | 0.14 |
| Carp | 44751 | Max WS | 5.36 | 92.38 | 94.03 | | 94.03 | 0.33 | 44.44 | | 0.11 |
| Carp | 44548 | Max WS | 7.87 | 92.43 | 93.94 | | 93.94 | 0.25 | 103.22 | | 0.08 |
| Carp | 44325 | Max WS | 8.01 | 92.12 | 93.85 | 93.04 | 93.85 | 0.46 | 51.38 | | 0.13 |
| Carp | 44324 | Hazeldean Cul Bridge | | | | | | | | | |
| Carp | 44302 | Max WS | 7.96 | 92.45 | 93.75 | | 93.77 | 0.7 | 78.06 | | 0.24 |
| Carp | 44267.4 | Max WS | 7.96 | 92.44 | 93.74 | | 93.75 | 0.51 | 96.75 | | 0.18 |
| Carp | 44218 | Max WS | 7.94 | 92.43 | 93.73 | | 93.73 | 0.24 | 151.15 | | 0.08 |
| Carp | 44193 | Max WS | 7.94 | 92.41 | 93.73 | | 93.73 | 0.19 | 143.28 | | 0.06 |
| Carp | 44153 | Max WS | 7.94 | 92.4 | 93.73 | | 93.73 | 0.15 | 131.37 | | 0.05 |
| Carp | 44093 | Max WS | 7.94 | 92.4 | 93.72 | | 93.72 | 0.14 | 118.52 | | 0.05 |
| Carp | 44068 | Max WS | 7.94 | 92.39 | 93.72 | | 93.72 | 0.12 | 144.23 | | 0.04 |
| Carp | 44044.2 | Max WS | 7.94 | 92.38 | 93.72 | | 93.72 | 0.14 | 144.68 | | 0.05 |
| Carp | 44020.4 | Max WS | 7.94 | 92.35 | 93.72 | | 93.72 | 0.13 | 140.96 | | 0.05 |
| Carp | 44013.6 | Max WS | 7.94 | 92.35 | 93.72 | | 93.72 | 0.11 | 133.55 | | 0.04 |
| Carp | 43993.2 | Max WS | 7.94 | 92.34 | 93.72 | | 93.72 | 0.14 | 143.2 | | 0.05 |
| Carp | 43966 | Max WS | 7.94 | 92.33 | 93.72 | | 93.72 | 0.16 | 126.47 | | 0.06 |
| Carp | 43954 | Max WS | 8.46 | 92.33 | 93.72 | | 93.72 | 0.12 | 143.89 | | 0.04 |
| Carp | 43946 | Max WS | 8.46 | 92.32 | 93.72 | | 93.72 | 0.14 | 146.19 | | 0.05 |
| Carp | 43938 | Max WS | 8.46 | 92.31 | 93.72 | | 93.72 | 0.11 | 146.89 | | 0.04 |
| Carp | 43852 | Max WS | 8.46 | 92.2 | 93.71 | | 93.71 | 0.19 | 145.2 | | 0.06 |
| Carp | 43822 | Max WS | 8.46 | 92.22 | 93.71 | | 93.71 | 0.17 | 132.87 | | 0.06 |
| Carp | 43813 | Max WS | 8.46 | 92.22 | 93.71 | | 93.71 | 0.29 | 120.03 | | 0.1 |
| Carp | 43799.6 | Max WS | 8.46 | 92.22 | 93.71 | | 93.71 | 0.26 | 123.15 | | 0.09 |
| Carp | 43764 | Max WS | 8.46 | 92.21 | 93.71 | | 93.71 | 0.18 | 160.92 | | 0.07 |
| Carp | 43745.8 | Max WS | 8.57 | 92.21 | 93.71 | | 93.71 | 0.18 | 160.73 | | 0.07 |
| Carp | 43645.7 | Max WS | 8.57 | 92.2 | 93.7 | | 93.7 | 0.17 | 131.33 | | 0.06 |
| Carp | 43582 | Max WS | 8.57 | 92.17 | 93.7 | | 93.7 | 0.16 | 135.89 | | 0.05 |
| Carp | 43572.4 | Max WS | 8.57 | 92.17 | 93.7 | | 93.7 | 0.19 | 112.21 | | 0.06 |
| Carp | 43524.2 | Max WS | 8.85 | 92.15 | 93.7 | | 93.7 | 0.23 | 104.22 | | 0.07 |
| Carp | 43519.4 | Max WS | 8.85 | 92.15 | 93.7 | | 93.7 | 0.23 | 96.31 | | 0.07 |
| Carp | 43375 | Max WS | 8.85 | 92.09 | 93.66 | 93 | 93.68 | 0.63 | 72.68 | | 0.2 |
| Carp | 43370 | Maple Gr. Upg Bridge | | | | | | | | | |
| Carp | 43364 | Max WS | 8.84 | 92.08 | 93.63 | | 93.65 | 0.68 | 22.71 | | 0.24 |
| Carp | 43223 | Max WS | 8.84 | 92.01 | 93.61 | | 93.61 | 0.1 | 116.86 | | 0.04 |
| Carp | 43215.2 | Max WS | 8.84 | 92.01 | 93.61 | | 93.61 | 0.1 | 117.36 | | 0.04 |
| Carp | 43199.8 | Max WS | 8.84 | 92.01 | 93.61 | | 93.61 | 0.11 | 144.82 | | 0.04 |
| Carp | 43196 | Max WS | 8.84 | 92.01 | 93.61 | | 93.61 | 0.11 | 156.41 | | 0.04 |
| Carp | 43180.6 | Max WS | 8.84 | 92.01 | 93.61 | | 93.61 | 0.11 | 162.84 | | 0.04 |
| Carp | 43173 | Max WS | 8.84 | 92.01 | 93.61 | | 93.61 | 0.1 | 248.99 | | 0.03 |
| Carp | 43163.8 | Max WS | 14.9 | 92.01 | 93.61 | | 93.61 | 0.23 | 192.97 | | 0.08 |

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|------|---------|-----------------------|-------|-------|-------|-------|-------|--------|--------|------|
| Carp | 43136.4 | Max WS | 14.9 | 92.01 | 93.61 | 93.61 | 0.23 | 154.84 | 0.09 | |
| Carp | 43131.8 | Max WS | 14.9 | 92.01 | 93.61 | 93.61 | 0.23 | 109.62 | 0.09 | |
| Carp | 43113.6 | Max WS | 14.9 | 92 | 93.6 | 93.61 | 0.23 | 110.43 | 0.09 | |
| Carp | 43100 | Max WS | 14.9 | 92 | 93.6 | 93.6 | 0.22 | 114.11 | 0.09 | |
| Carp | 43072 | Max WS | 14.9 | 92 | 93.6 | 93.6 | 0.17 | 115.83 | 0.07 | |
| Carp | 43028.3 | Max WS | 14.92 | 91.96 | 93.59 | 93.59 | 0.19 | 107.73 | 0.07 | |
| Carp | 43018.6 | Max WS | 14.92 | 91.96 | 93.59 | 93.59 | 0.19 | 105.02 | 0.07 | |
| Carp | 42975 | Max WS | 14.91 | 91.92 | 93.52 | 93.57 | 0.98 | 89.88 | 0.37 | |
| Carp | 42970.1 | Max WS | 14.91 | 91.92 | 93.55 | 93.61 | 1.19 | 114.84 | 0.32 | |
| Carp | 42951.2 | Max WS | 15.2 | 91.91 | 93.53 | 93.56 | 0.91 | 113.11 | 0.26 | |
| Carp | 42918.2 | Max WS | 15.2 | 91.91 | 93.53 | 93.56 | 0.77 | 103.6 | 0.26 | |
| Carp | 42913.5 | Max WS | 15.2 | 91.91 | 93.53 | 93.56 | 0.78 | 101.77 | 0.27 | |
| Carp | 42904.1 | Max WS | 15.2 | 91.9 | 93.52 | 93.56 | 0.79 | 97.18 | 0.29 | |
| Carp | 42890 | Max WS | 15.18 | 91.9 | 93.49 | 93.52 | 0.85 | 78.67 | 0.33 | |
| Carp | 42889 | Max WS | 15.18 | 91.8 | 93.49 | 92.87 | 93.52 | 0.89 | 258.47 | 0.24 |
| Carp | 42885 | Palladium Driv Bridge | | | | | | | | |
| Carp | 42855 | Max WS | 15.15 | 91.85 | 93.46 | 93.49 | 0.8 | 206.79 | 0.26 | |
| Carp | 42716 | Max WS | 15.16 | 91.75 | 93.45 | 93.45 | 0.33 | 139.12 | 0.11 | |
| Carp | 42700.9 | Max WS | 15.16 | 91.74 | 93.45 | 93.45 | 0.34 | 129.09 | 0.11 | |
| Carp | 42686 | Max WS | 15.16 | 91.73 | 93.44 | 93.45 | 0.35 | 115.52 | 0.12 | |
| Carp | 42558 | Max WS | 15.16 | 91.71 | 93.41 | 93.42 | 0.47 | 75.23 | 0.17 | |
| Carp | 42548.4 | Max WS | 15.57 | 91.7 | 93.41 | 93.42 | 0.41 | 75.27 | 0.14 | |
| Carp | 42410 | Max WS | 15.56 | 91.6 | 93.37 | 93.39 | 0.79 | 71.52 | 0.2 | |
| Carp | 42391.5 | Max WS | 15.56 | 91.59 | 93.36 | 93.38 | 0.79 | 68.25 | 0.2 | |
| Carp | 42212 | Max WS | 15.57 | 91.52 | 93.3 | 93.31 | 0.58 | 80.87 | 0.14 | |
| Carp | 42182 | Max WS | 15.56 | 91.51 | 93.24 | 92.67 | 93.29 | 1.07 | 28.52 | 0.36 |
| Carp | 42172 | Highway 417 S Bridge | | | | | | | | |
| Carp | 42154 | Max WS | 15.56 | 91.24 | 93.2 | 93.25 | 1.02 | 23.42 | 0.34 | |
| Carp | 42134 | Max WS | 15.56 | 91.51 | 93.2 | 93.23 | 0.74 | 25.23 | 0.24 | |
| Carp | 42124 | Max WS | 15.56 | 91.36 | 93.16 | 92.59 | 93.22 | 1.11 | 21.79 | 0.38 |
| Carp | 42119 | Highway 417 N Bridge | | | | | | | | |
| Carp | 42097 | Max WS | 15.56 | 91.49 | 93.14 | 93.18 | 0.92 | 17.72 | 0.27 | |
| Carp | 42075 | Max WS | 15.38 | 91.48 | 93.15 | 93.15 | 0.19 | 104.64 | 0.06 | |
| Carp | 42036 | Max WS | 15.38 | 91.47 | 93.15 | 93.15 | 0.39 | 149.33 | 0.14 | |
| Carp | 42002 | Max WS | 15.39 | 91.46 | 93.15 | 93.15 | 0.16 | 135.09 | 0.05 | |
| Carp | 41997.6 | Max WS | 15.41 | 91.46 | 93.15 | 93.15 | 0.22 | 146.76 | 0.07 | |
| Carp | 41970.1 | Max WS | 15.41 | 91.44 | 93.15 | 93.15 | 0.17 | 142.7 | 0.06 | |
| Carp | 41948.9 | Max WS | 15.56 | 91.44 | 93.14 | 93.15 | 0.27 | 127.54 | 0.09 | |
| Carp | 41896 | Max WS | 15.56 | 91.42 | 93.14 | 93.14 | 0.28 | 132.17 | 0.07 | |
| Carp | 41845.2 | Max WS | 15.56 | 91.4 | 93.14 | 93.14 | 0.24 | 97.87 | 0.07 | |
| Carp | 41836 | Max WS | 15.56 | 91.4 | 93.14 | 93.14 | 0.34 | 121.05 | 0.1 | |
| Carp | 41776 | Max WS | 15.56 | 91.38 | 93.12 | 93.13 | 0.48 | 139.76 | 0.13 | |
| Carp | 41769 | Max WS | 15.56 | 91.38 | 93.12 | 93.13 | 0.41 | 122.26 | 0.12 | |
| Carp | 41744 | Max WS | 15.71 | 91.36 | 93.12 | 93.13 | 0.21 | 129.21 | 0.08 | |
| Carp | 41743 | Max WS | 15.68 | 91.36 | 93.11 | 92.45 | 93.13 | 0.76 | 113.47 | 0.23 |
| Carp | 41738 | Fut Transitway Bridge | | | | | | | | |
| Carp | 41725.5 | Max WS | 15.68 | 91.35 | 93.11 | 93.12 | 0.46 | 155.34 | 0.12 | |
| Carp | 41671 | Max WS | 15.68 | 91.35 | 93.11 | 93.12 | 0.42 | 99.52 | 0.13 | |
| Carp | 41608 | Max WS | 18.63 | 91.32 | 93.1 | 92.01 | 93.11 | 0.46 | 107.92 | 0.12 |
| Carp | 41602 | Future Campe Bridge | | | | | | | | |
| Carp | 41572 | Max WS | 18.59 | 91.31 | 93.08 | 93.09 | 0.46 | 110.1 | 0.12 | |
| Carp | 41374.8 | Max WS | 18.24 | 91.26 | 92.95 | 93.07 | 1.63 | 34.22 | 0.46 | |

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|------|------------------------------|-------|-------|-------|-------|------|--------|--------|------|
| Carp | 41357 Max WS | 17.72 | 91.26 | 92.88 | 93 | 1.51 | 17.69 | 0.59 | |
| Carp | 41349.4 Max WS | 17.54 | 91.25 | 92.86 | 92.96 | 1.34 | 175.35 | 0.65 | |
| Carp | 41338 Max WS | 17.63 | 91.24 | 92.87 | 92.87 | 0.1 | 202.62 | 0.04 | |
| Carp | 41320 Max WS | 17.64 | 91.24 | 92.87 | 92.87 | 0.12 | 240.82 | 0.03 | |
| Carp | 41198 Max WS | 17.55 | 91.21 | 92.87 | 92.87 | 0.14 | 204.03 | 0.04 | |
| Carp | 41180 Max WS | 17.55 | 91.21 | 92.87 | 92.87 | 0.12 | 212.1 | 0.04 | |
| Carp | 41125.4 Max WS | 17.55 | 91.21 | 92.87 | 92.87 | 0.17 | 198.41 | 0.04 | |
| Carp | 41117 Max WS | 17.55 | 91.2 | 92.86 | 92.87 | 0.39 | 193.49 | 0.14 | |
| Carp | 41071 Max WS | 17.56 | 91.18 | 92.86 | 92.87 | 0.12 | 197.3 | 0.04 | |
| Carp | 40965.2 Max WS | 17.83 | 91.14 | 92.86 | 92.86 | 0.13 | 174.29 | 0.04 | |
| Carp | 40956 Max WS | 17.83 | 91.14 | 92.86 | 92.86 | 0.18 | 171.04 | 0.06 | |
| Carp | 40919.2 Max WS | 17.76 | 91.12 | 92.86 | 92.86 | 0.33 | 184.64 | 0.1 | |
| Carp | 40910 Max WS | 17.83 | 91.12 | 92.86 | 92.86 | 0.09 | 204.71 | 0.03 | |
| Carp | 40703 Max WS | 17.77 | 91.05 | 92.86 | 92.86 | 0.12 | 197.1 | 0.03 | |
| Carp | 40688.5 Max WS | 18.05 | 91.04 | 92.85 | 92.86 | 0.44 | 181.55 | 0.13 | |
| Carp | 40640.2 Max WS | 18.05 | 91.03 | 92.85 | 92.85 | 0.31 | 276.11 | 0.09 | |
| Carp | 40505 Max WS | 17.99 | 91 | 92.84 | 92.84 | 0.22 | 253.23 | 0.06 | |
| Carp | 40423.5 Max WS | 17.99 | 90.97 | 92.84 | 92.84 | 0.19 | 300.2 | 0.05 | |
| Carp | 40415 Max WS | 17.99 | 90.96 | 92.84 | 92.84 | 0.18 | 306.71 | 0.05 | |
| Carp | 40348.1 Max WS | 17.99 | 90.95 | 92.83 | 92.84 | 0.15 | 308.32 | 0.04 | |
| Carp | 40339.7 Max WS | 17.99 | 90.95 | 92.84 | 92.84 | 0.07 | 307.38 | 0.02 | |
| Carp | 40298 Max WS | 17.99 | 90.93 | 92.83 | 92.83 | 0.07 | 311.18 | 0.02 | |
| Carp | 40262.9 Max WS | 18.42 | 90.92 | 92.83 | 92.83 | 0.09 | 286.82 | 0.02 | |
| Carp | 40113.9 Max WS | 18.41 | 90.88 | 92.82 | 92.83 | 0.41 | 195.05 | 0.11 | |
| Carp | 40092 Max WS | 18.41 | 90.87 | 92.82 | 92.83 | 0.42 | 183.11 | 0.11 | |
| Carp | 40077.6 Max WS | 18.59 | 91.07 | 92.79 | 92.82 | 0.79 | 193.16 | 0.22 | |
| Carp | 40071.5 Max WS | 18.53 | 91.15 | 92.73 | 92.81 | 1.26 | 188.86 | 0.36 | |
| Carp | 40070 Richardson Sic Culvert | | | | | | | | |
| Carp | 40050 Max WS | 18.53 | 91.15 | 92.74 | 92.81 | 1.11 | 183.84 | 0.3 | |
| Carp | 40035.1 Max WS | 18.56 | 91.13 | 92.77 | 92.78 | 0.47 | 182.01 | 0.14 | |
| Carp | 39892 Max WS | 18.53 | 90.99 | 92.72 | 92.73 | 0.46 | 106.93 | 0.13 | |
| Carp | 39695 Max WS | 18.49 | 90.78 | 92.65 | 92.67 | 0.51 | 114.16 | 0.17 | |
| Carp | 39400 Max WS | 18.43 | 90.66 | 92.53 | 92.55 | 0.61 | 138.36 | 0.17 | |
| Carp | 39202 Max WS | 18.38 | 90.57 | 92.46 | 92.47 | 0.58 | 268.08 | 0.15 | |
| Carp | 39102 Max WS | 18.35 | 90.47 | 92.43 | 92.45 | 0.59 | 320.49 | 0.15 | |
| Carp | 39002 Max WS | 18.33 | 90.37 | 92.4 | 92.41 | 0.6 | 236.6 | 0.16 | |
| Carp | 38902 Max WS | 18.31 | 90.27 | 92.37 | 92.38 | 0.48 | 261.26 | 0.13 | |
| Carp | 38697 Max WS | 18.29 | 90.07 | 92.35 | 92.35 | 0.24 | 307.37 | 0.06 | |
| Carp | 38692.5 Max WS | 18.37 | 90.07 | 92.35 | 92.35 | 0.23 | 307.25 | 0.06 | |
| Carp | 38236 Max WS | 18.35 | 90.16 | 92.28 | 92.29 | 0.61 | 265.25 | 0.15 | |
| Carp | 37894 Max WS | 25.08 | 90.03 | 92.16 | 92.17 | 0.58 | 291.76 | 0.15 | |
| Carp | 37869.5 Max WS | 25.08 | 90.01 | 92.15 | 92.16 | 0.58 | 290.3 | 0.14 | |
| Carp | 37390.4 Max WS | 24.38 | 89.68 | 92.07 | 92.07 | 0.39 | 275.36 | 0.09 | |
| Carp | 37380.4 Max WS | 24.16 | 89.67 | 92.04 | 90.89 | 92.1 | 1.12 | 270.98 | 0.26 |
| Carp | 37370 Huntmar Bridge | | | | | | | | |
| Carp | 37355.4 Max WS | 23.34 | 89.66 | 91.98 | 92.04 | 1.12 | 250.06 | 0.26 | |
| Carp | 37101 Max WS | 23.35 | 89.48 | 91.97 | 91.98 | 0.31 | 263.33 | 0.07 | |
| Carp | 36580 Max WS | 23.07 | 89.1 | 91.94 | 91.94 | 0.31 | 359.96 | 0.07 | |
| Carp | 35288 Max WS | 22.71 | 89.05 | 91.77 | 91.78 | 0.62 | 130.65 | 0.13 | |
| Carp | 35073 Max WS | 22.68 | 89.27 | 91.73 | 91.74 | 0.5 | 87.81 | 0.11 | |
| Carp | 34555 Max WS | 22.63 | 89.06 | 91.62 | 91.64 | 0.7 | 66.69 | 0.15 | |
| Carp | 33472 Max WS | 22.63 | 88.54 | 91.49 | 91.5 | 0.36 | 139.61 | 0.07 | |

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|------|-------|------------|--------|-------|-------|-------|-------|------|--------|------|
| Carp | 33201 | Max WS | 22.89 | 89.15 | 91.44 | 90.04 | 91.46 | 0.68 | 127.19 | 0.16 |
| Carp | 33197 | March Road | Bridge | | | | | | | |
| Carp | 33181 | Max WS | 22.88 | 89.16 | 91.42 | | 91.45 | 0.69 | 126.23 | 0.16 |
| Carp | 32609 | Max WS | 22.85 | 89.56 | 91.26 | | 91.27 | 0.59 | 157.93 | 0.15 |
| Carp | 32096 | Max WS | 22.84 | 88.9 | 91.12 | | 91.13 | 0.56 | 174.27 | 0.14 |
| Carp | 31662 | Max WS | 22.88 | 88.74 | 90.99 | 89.71 | 91.01 | 0.79 | 91.02 | 0.17 |
| Carp | 31658 | Carp Road | Bridge | | | | | | | |
| Carp | 31642 | Max WS | 22.88 | 88.74 | 90.98 | | 91 | 0.79 | 90.44 | 0.17 |
| Carp | 31414 | Max WS | 24.6 | 88.89 | 90.81 | 90.06 | 90.85 | 1.05 | 86.22 | 0.27 |

Future 25 year with Normal Depth Condition

HEC-RAS Plan: F25w3.8nHFTc River: Carp River Reach: Carp Profile: Max WS

| Reach | River Sta | Profile | Q Total (m3/s) | Min Ch El (m) | W.S. Elev (m) | Crit W.S. (m) | E.G. Elev (m) | Vel Chnl (m/s) | Top Width (m) | Froude # | Chl |
|-------|-----------|---------------|-------------------|------------------|------------------|------------------|------------------|-------------------|------------------|----------|------|
| Carp | 44953 | Max WS | 7.81 | 92.75 | 94.3 | | 94.3 | 0.3 | 129.54 | | 0.1 |
| Carp | 44890 | Max WS | 7.81 | 92.63 | 94.28 | | 94.28 | 0.34 | 112.49 | | 0.12 |
| Carp | 44751 | Max WS | 7.8 | 92.38 | 94.23 | | 94.24 | 0.34 | 102.2 | | 0.11 |
| Carp | 44548 | Max WS | 11.63 | 92.43 | 94.16 | | 94.16 | 0.24 | 111.48 | | 0.07 |
| Carp | 44325 | Max WS | 11.81 | 92.12 | 94.08 | 93.17 | 94.09 | 0.53 | 97.46 | | 0.13 |
| Carp | 44324 | Hazeldean Cul | Bridge | | | | | | | | |
| Carp | 44302 | Max WS | 11.75 | 92.45 | 93.94 | | 93.96 | 0.79 | 92.36 | | 0.25 |
| Carp | 44267.4 | Max WS | 11.75 | 92.44 | 93.94 | | 93.94 | 0.49 | 111.44 | | 0.15 |
| Carp | 44218 | Max WS | 11.74 | 92.43 | 93.93 | | 93.93 | 0.24 | 156.17 | | 0.08 |
| Carp | 44193 | Max WS | 11.74 | 92.41 | 93.93 | | 93.93 | 0.19 | 147.13 | | 0.06 |
| Carp | 44153 | Max WS | 11.74 | 92.4 | 93.93 | | 93.93 | 0.16 | 134.59 | | 0.05 |
| Carp | 44093 | Max WS | 11.74 | 92.4 | 93.93 | | 93.93 | 0.15 | 120.83 | | 0.05 |
| Carp | 44068 | Max WS | 11.74 | 92.39 | 93.93 | | 93.93 | 0.14 | 146.95 | | 0.04 |
| Carp | 44044.2 | Max WS | 11.73 | 92.38 | 93.92 | | 93.93 | 0.15 | 147.02 | | 0.05 |
| Carp | 44020.4 | Max WS | 11.73 | 92.35 | 93.92 | | 93.92 | 0.15 | 144.32 | | 0.05 |
| Carp | 44013.6 | Max WS | 11.73 | 92.35 | 93.92 | | 93.92 | 0.12 | 138.34 | | 0.04 |
| Carp | 43993.2 | Max WS | 11.73 | 92.34 | 93.92 | | 93.92 | 0.15 | 145 | | 0.05 |
| Carp | 43966 | Max WS | 11.73 | 92.33 | 93.92 | | 93.92 | 0.18 | 142.41 | | 0.06 |
| Carp | 43954 | Max WS | 12.47 | 92.33 | 93.92 | | 93.92 | 0.13 | 144.91 | | 0.04 |
| Carp | 43946 | Max WS | 12.47 | 92.32 | 93.92 | | 93.92 | 0.15 | 147.21 | | 0.04 |
| Carp | 43938 | Max WS | 12.47 | 92.31 | 93.92 | | 93.92 | 0.12 | 147.91 | | 0.04 |
| Carp | 43852 | Max WS | 12.46 | 92.2 | 93.92 | | 93.92 | 0.2 | 150.72 | | 0.06 |
| Carp | 43822 | Max WS | 12.46 | 92.22 | 93.92 | | 93.92 | 0.19 | 156.65 | | 0.06 |
| Carp | 43813 | Max WS | 12.46 | 92.22 | 93.91 | | 93.92 | 0.3 | 144.01 | | 0.09 |
| Carp | 43799.6 | Max WS | 12.46 | 92.22 | 93.91 | | 93.92 | 0.27 | 153.68 | | 0.09 |
| Carp | 43764 | Max WS | 12.46 | 92.21 | 93.91 | | 93.91 | 0.2 | 209.71 | | 0.06 |
| Carp | 43745.8 | Max WS | 12.62 | 92.21 | 93.91 | | 93.91 | 0.2 | 210.33 | | 0.06 |
| Carp | 43645.7 | Max WS | 12.62 | 92.2 | 93.91 | | 93.91 | 0.19 | 138.62 | | 0.06 |
| Carp | 43582 | Max WS | 12.61 | 92.17 | 93.9 | | 93.91 | 0.18 | 139.87 | | 0.05 |
| Carp | 43572.4 | Max WS | 12.61 | 92.17 | 93.9 | | 93.91 | 0.22 | 126.77 | | 0.06 |
| Carp | 43524.2 | Max WS | 12.7 | 92.15 | 93.9 | | 93.9 | 0.25 | 112.23 | | 0.07 |
| Carp | 43519.4 | Max WS | 12.7 | 92.15 | 93.9 | | 93.9 | 0.25 | 97.71 | | 0.07 |
| Carp | 43375 | Max WS | 12.7 | 92.09 | 93.87 | 93.13 | 93.89 | 0.74 | 74.9 | | 0.22 |
| Carp | 43370 | Maple Gr. Upg | Bridge | | | | | | | | |
| Carp | 43364 | Max WS | 12.68 | 92.08 | 93.83 | | 93.86 | 0.78 | 79.48 | | 0.25 |
| Carp | 43223 | Max WS | 12.68 | 92.01 | 93.82 | | 93.82 | 0.12 | 117.92 | | 0.04 |
| Carp | 43215.2 | Max WS | 12.68 | 92.01 | 93.82 | | 93.82 | 0.12 | 118.42 | | 0.04 |
| Carp | 43199.8 | Max WS | 12.67 | 92.01 | 93.82 | | 93.82 | 0.12 | 158.92 | | 0.04 |

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|------|---------|-----------------------|-------|-------|-------|-------|-------|--------|--------|------|
| Carp | 43196 | Max WS | 12.67 | 92.01 | 93.82 | 93.82 | 0.13 | 183.17 | 0.04 | |
| Carp | 43180.6 | Max WS | 12.67 | 92.01 | 93.82 | 93.82 | 0.13 | 215.97 | 0.04 | |
| Carp | 43173 | Max WS | 12.67 | 92.01 | 93.82 | 93.82 | 0.11 | 266.07 | 0.03 | |
| Carp | 43163.8 | Max WS | 23.49 | 92.01 | 93.82 | 93.82 | 0.3 | 211.62 | 0.09 | |
| Carp | 43136.4 | Max WS | 23.48 | 92.01 | 93.82 | 93.82 | 0.29 | 217.38 | 0.1 | |
| Carp | 43131.8 | Max WS | 23.48 | 92.01 | 93.82 | 93.82 | 0.29 | 213.42 | 0.1 | |
| Carp | 43113.6 | Max WS | 23.48 | 92 | 93.81 | 93.82 | 0.29 | 147.27 | 0.1 | |
| Carp | 43100 | Max WS | 23.48 | 92 | 93.81 | 93.81 | 0.28 | 123.72 | 0.1 | |
| Carp | 43072 | Max WS | 23.48 | 92 | 93.81 | 93.81 | 0.22 | 134.36 | 0.08 | |
| Carp | 43028.3 | Max WS | 23.51 | 91.96 | 93.8 | 93.81 | 0.24 | 123.77 | 0.09 | |
| Carp | 43018.6 | Max WS | 23.51 | 91.96 | 93.8 | 93.8 | 0.24 | 120.66 | 0.09 | |
| Carp | 42975 | Max WS | 23.5 | 91.92 | 93.8 | 93.8 | 0.27 | 107.56 | 0.09 | |
| Carp | 42970.1 | Max WS | 23.5 | 91.92 | 93.8 | 93.8 | 0.36 | 119.89 | 0.09 | |
| Carp | 42951.2 | Max WS | 23.85 | 91.91 | 93.79 | 93.8 | 0.32 | 120.11 | 0.09 | |
| Carp | 42918.2 | Max WS | 23.85 | 91.91 | 93.79 | 93.79 | 0.3 | 119.28 | 0.09 | |
| Carp | 42913.5 | Max WS | 23.85 | 91.91 | 93.79 | 93.79 | 0.3 | 119.28 | 0.09 | |
| Carp | 42904.1 | Max WS | 23.85 | 91.9 | 93.79 | 93.79 | 0.3 | 119.05 | 0.09 | |
| Carp | 42890 | Max WS | 23.85 | 91.9 | 93.77 | 93.8 | 0.81 | 114.59 | 0.27 | |
| Carp | 42889 | Max WS | 23.85 | 91.8 | 93.76 | 93.06 | 93.8 | 1.09 | 264.45 | 0.27 |
| Carp | 42885 | Palladium Driv Bridge | | | | | | | | |
| Carp | 42855 | Max WS | 23.83 | 91.85 | 93.71 | 93.76 | 0.99 | 213.72 | 0.29 | |
| Carp | 42716 | Max WS | 23.83 | 91.75 | 93.71 | 93.72 | 0.36 | 151.73 | 0.11 | |
| Carp | 42700.9 | Max WS | 23.83 | 91.74 | 93.71 | 93.72 | 0.37 | 144.71 | 0.11 | |
| Carp | 42686 | Max WS | 23.83 | 91.73 | 93.71 | 93.71 | 0.4 | 133.77 | 0.12 | |
| Carp | 42558 | Max WS | 23.84 | 91.71 | 93.68 | 93.69 | 0.45 | 88.21 | 0.14 | |
| Carp | 42548.4 | Max WS | 24.58 | 91.7 | 93.68 | 93.69 | 0.47 | 83.69 | 0.14 | |
| Carp | 42410 | Max WS | 24.56 | 91.6 | 93.63 | 93.66 | 0.89 | 78.43 | 0.21 | |
| Carp | 42391.5 | Max WS | 24.56 | 91.59 | 93.62 | 93.65 | 0.9 | 74.15 | 0.21 | |
| Carp | 42212 | Max WS | 24.55 | 91.52 | 93.56 | 93.57 | 0.67 | 84.01 | 0.16 | |
| Carp | 42182 | Max WS | 24.54 | 91.51 | 93.48 | 92.91 | 93.57 | 1.33 | 64.71 | 0.4 |
| Carp | 42172 | Highway 417 S Bridge | | | | | | | | |
| Carp | 42154 | Max WS | 24.51 | 91.24 | 93.44 | 93.52 | 1.29 | 48.29 | 0.38 | |
| Carp | 42134 | Max WS | 24.54 | 91.51 | 93.46 | 93.5 | 0.91 | 51.7 | 0.27 | |
| Carp | 42124 | Max WS | 24.48 | 91.36 | 93.39 | 92.84 | 93.49 | 1.38 | 41.71 | 0.42 |
| Carp | 42119 | Highway 417 N Bridge | | | | | | | | |
| Carp | 42097 | Max WS | 24.49 | 91.49 | 93.37 | 93.44 | 1.2 | 20.34 | 0.33 | |
| Carp | 42075 | Max WS | 24.52 | 91.48 | 93.4 | 93.4 | 0.24 | 105.13 | 0.07 | |
| Carp | 42036 | Max WS | 24.52 | 91.47 | 93.39 | 93.4 | 0.2 | 151.53 | 0.07 | |
| Carp | 42002 | Max WS | 24.52 | 91.46 | 93.39 | 93.39 | 0.21 | 148.63 | 0.06 | |
| Carp | 41997.6 | Max WS | 24.55 | 91.46 | 93.39 | 93.39 | 0.23 | 151 | 0.07 | |
| Carp | 41970.1 | Max WS | 24.55 | 91.44 | 93.39 | 93.39 | 0.21 | 149.14 | 0.06 | |
| Carp | 41948.9 | Max WS | 24.58 | 91.44 | 93.39 | 93.39 | 0.29 | 181.92 | 0.08 | |
| Carp | 41896 | Max WS | 24.58 | 91.42 | 93.39 | 93.39 | 0.31 | 184.11 | 0.07 | |
| Carp | 41845.2 | Max WS | 24.59 | 91.4 | 93.38 | 93.39 | 0.29 | 149.34 | 0.08 | |
| Carp | 41836 | Max WS | 24.59 | 91.4 | 93.38 | 93.39 | 0.39 | 125.67 | 0.11 | |
| Carp | 41776 | Max WS | 24.59 | 91.38 | 93.37 | 93.38 | 0.51 | 148.77 | 0.13 | |
| Carp | 41769 | Max WS | 24.59 | 91.38 | 93.37 | 93.38 | 0.46 | 139.67 | 0.12 | |
| Carp | 41744 | Max WS | 24.62 | 91.36 | 93.37 | 93.37 | 0.25 | 149.63 | 0.08 | |
| Carp | 41743 | Max WS | 24.62 | 91.36 | 93.35 | 92.59 | 93.39 | 0.97 | 124.86 | 0.26 |
| Carp | 41738 | Fut Transitway Bridge | | | | | | | | |
| Carp | 41725.5 | Max WS | 24.62 | 91.35 | 93.36 | 93.38 | 0.62 | 176.47 | 0.15 | |
| Carp | 41671 | Max WS | 24.62 | 91.35 | 93.36 | 93.37 | 0.47 | 101.15 | 0.13 | |

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|------|---------|------------------------|-------|-------|-------|-------|-------|------|--------|------|
| Carp | 41608 | Max WS | 30.27 | 91.32 | 93.33 | 92.15 | 93.36 | 0.65 | 109.41 | 0.16 |
| Carp | 41602 | Future Campe Bridge | | | | | | | | |
| Carp | 41572 | Max WS | 30.22 | 91.31 | 93.3 | | 93.32 | 0.65 | 110.1 | 0.16 |
| Carp | 41374.8 | Max WS | 29.53 | 91.26 | 93.15 | | 93.32 | 1.99 | 93.53 | 0.53 |
| Carp | 41357 | Max WS | 29.07 | 91.26 | 93.12 | | 93.24 | 1.63 | 128.13 | 0.64 |
| Carp | 41349.4 | Max WS | 29.49 | 91.25 | 93.15 | | 93.15 | 0.12 | 258.19 | 0.05 |
| Carp | 41338 | Max WS | 29.49 | 91.24 | 93.15 | | 93.15 | 0.11 | 217.68 | 0.04 |
| Carp | 41320 | Max WS | 29.49 | 91.24 | 93.15 | | 93.15 | 0.15 | 249.03 | 0.04 |
| Carp | 41198 | Max WS | 29.49 | 91.21 | 93.15 | | 93.15 | 0.17 | 232.32 | 0.05 |
| Carp | 41180 | Max WS | 29.39 | 91.21 | 93.15 | | 93.15 | 0.15 | 214.04 | 0.04 |
| Carp | 41125.4 | Max WS | 29.39 | 91.21 | 93.15 | | 93.15 | 0.2 | 199.62 | 0.05 |
| Carp | 41117 | Max WS | 29.39 | 91.2 | 93.14 | | 93.15 | 0.41 | 194.67 | 0.13 |
| Carp | 41071 | Max WS | 29.45 | 91.18 | 93.14 | | 93.15 | 0.15 | 246.03 | 0.05 |
| Carp | 40965.2 | Max WS | 29.51 | 91.14 | 93.14 | | 93.14 | 0.17 | 179.74 | 0.05 |
| Carp | 40956 | Max WS | 29.51 | 91.14 | 93.14 | | 93.14 | 0.23 | 175.51 | 0.07 |
| Carp | 40919.2 | Max WS | 29.52 | 91.12 | 93.14 | | 93.14 | 0.36 | 187.06 | 0.1 |
| Carp | 40910 | Max WS | 29.52 | 91.12 | 93.14 | | 93.14 | 0.12 | 206.7 | 0.03 |
| Carp | 40703 | Max WS | 29.52 | 91.05 | 93.14 | | 93.14 | 0.15 | 199.38 | 0.04 |
| Carp | 40688.5 | Max WS | 30.12 | 91.04 | 93.13 | | 93.14 | 0.47 | 188.51 | 0.12 |
| Carp | 40640.2 | Max WS | 30.12 | 91.03 | 93.13 | | 93.13 | 0.32 | 312.61 | 0.09 |
| Carp | 40505 | Max WS | 30.05 | 91 | 93.12 | | 93.12 | 0.25 | 255.24 | 0.07 |
| Carp | 40423.5 | Max WS | 30.06 | 90.97 | 93.12 | | 93.12 | 0.22 | 300.2 | 0.06 |
| Carp | 40415 | Max WS | 30.06 | 90.96 | 93.12 | | 93.12 | 0.2 | 368.35 | 0.05 |
| Carp | 40348.1 | Max WS | 30.06 | 90.95 | 93.12 | | 93.12 | 0.17 | 341.08 | 0.04 |
| Carp | 40339.7 | Max WS | 30.06 | 90.95 | 93.12 | | 93.12 | 0.1 | 338.39 | 0.02 |
| Carp | 40298 | Max WS | 30.06 | 90.93 | 93.12 | | 93.12 | 0.11 | 379.09 | 0.03 |
| Carp | 40262.9 | Max WS | 30.49 | 90.92 | 93.12 | | 93.12 | 0.13 | 354.94 | 0.03 |
| Carp | 40113.9 | Max WS | 30.48 | 90.88 | 93.1 | | 93.12 | 0.57 | 277.78 | 0.14 |
| Carp | 40092 | Max WS | 30.47 | 90.87 | 93.1 | | 93.11 | 0.56 | 272.38 | 0.13 |
| Carp | 40077.6 | Max WS | 30.83 | 91.07 | 93.05 | | 93.1 | 1.07 | 261.79 | 0.27 |
| Carp | 40071.5 | Max WS | 30.63 | 91.15 | 92.92 | | 93.08 | 1.8 | 199.24 | 0.48 |
| Carp | 40070 | Richardson Sic Culvert | | | | | | | | |
| Carp | 40050 | Max WS | 30.68 | 91.15 | 92.95 | | 93.08 | 1.6 | 196.28 | 0.4 |
| Carp | 40035.1 | Max WS | 30.76 | 91.13 | 93 | | 93.01 | 0.51 | 230.05 | 0.14 |
| Carp | 39892 | Max WS | 30.72 | 90.99 | 92.95 | | 92.97 | 0.56 | 182.39 | 0.15 |
| Carp | 39695 | Max WS | 30.6 | 90.78 | 92.88 | | 92.9 | 0.57 | 190.38 | 0.17 |
| Carp | 39400 | Max WS | 30.29 | 90.66 | 92.77 | | 92.78 | 0.7 | 249.96 | 0.18 |
| Carp | 39202 | Max WS | 30.03 | 90.57 | 92.7 | | 92.71 | 0.51 | 333.28 | 0.12 |
| Carp | 39102 | Max WS | 29.97 | 90.47 | 92.69 | | 92.69 | 0.47 | 435.4 | 0.11 |
| Carp | 39002 | Max WS | 29.91 | 90.37 | 92.66 | | 92.67 | 0.55 | 392.73 | 0.13 |
| Carp | 38902 | Max WS | 29.85 | 90.27 | 92.65 | | 92.65 | 0.41 | 336.44 | 0.1 |
| Carp | 38697 | Max WS | 29.79 | 90.07 | 92.63 | | 92.63 | 0.23 | 385.71 | 0.06 |
| Carp | 38692.5 | Max WS | 29.96 | 90.07 | 92.63 | | 92.63 | 0.21 | 378.94 | 0.06 |
| Carp | 38236 | Max WS | 29.91 | 90.16 | 92.59 | | 92.6 | 0.46 | 340.89 | 0.1 |
| Carp | 37894 | Max WS | 41.88 | 90.03 | 92.53 | | 92.53 | 0.47 | 349.12 | 0.11 |
| Carp | 37869.5 | Max WS | 41.88 | 90.01 | 92.52 | | 92.53 | 0.47 | 350.66 | 0.11 |
| Carp | 37390.4 | Max WS | 41.37 | 89.68 | 92.47 | | 92.48 | 0.37 | 348.29 | 0.08 |
| Carp | 37380.4 | Max WS | 40.87 | 89.67 | 92.43 | 91.24 | 92.55 | 1.57 | 332.36 | 0.33 |
| Carp | 37370 | Huntmar Bridge | | | | | | | | |
| Carp | 37355.4 | Max WS | 38.93 | 89.66 | 92.33 | | 92.45 | 1.57 | 302.77 | 0.34 |
| Carp | 37101 | Max WS | 39.11 | 89.48 | 92.34 | | 92.34 | 0.32 | 309.95 | 0.07 |
| Carp | 36580 | Max WS | 38.72 | 89.1 | 92.31 | | 92.31 | 0.29 | 388.19 | 0.06 |

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|------|---------|-----------------------|-------|-------|-------|-------|-------|--------|--------|------|
| Carp | 43364 | Max WS | 16.2 | 92.08 | 94.02 | 94.05 | 0.84 | 103.13 | 0.24 | |
| Carp | 43223 | Max WS | 16.2 | 92.01 | 94.02 | 94.02 | 0.13 | 118.9 | 0.04 | |
| Carp | 43215.2 | Max WS | 16.2 | 92.01 | 94.02 | 94.02 | 0.13 | 119.4 | 0.04 | |
| Carp | 43199.8 | Max WS | 16.2 | 92.01 | 94.02 | 94.02 | 0.13 | 173.6 | 0.04 | |
| Carp | 43196 | Max WS | 16.2 | 92.01 | 94.02 | 94.02 | 0.14 | 208.36 | 0.04 | |
| Carp | 43180.6 | Max WS | 16.2 | 92.01 | 94.02 | 94.02 | 0.14 | 236.36 | 0.04 | |
| Carp | 43173 | Max WS | 16.2 | 92.01 | 94.02 | 94.02 | 0.12 | 290.73 | 0.03 | |
| Carp | 43163.8 | Max WS | 31.09 | 92.01 | 94.02 | 94.02 | 0.32 | 215.53 | 0.09 | |
| Carp | 43136.4 | Max WS | 31.09 | 92.01 | 94.02 | 94.02 | 0.31 | 225.15 | 0.09 | |
| Carp | 43131.8 | Max WS | 31.09 | 92.01 | 94.01 | 94.02 | 0.31 | 217.1 | 0.09 | |
| Carp | 43113.6 | Max WS | 31.08 | 92 | 94.01 | 94.01 | 0.31 | 223 | 0.1 | |
| Carp | 43100 | Max WS | 31.08 | 92 | 94.01 | 94.01 | 0.3 | 231.31 | 0.1 | |
| Carp | 43072 | Max WS | 31.08 | 92 | 94.01 | 94.01 | 0.24 | 252.31 | 0.08 | |
| Carp | 43028.3 | Max WS | 31.11 | 91.96 | 94 | 94 | 0.27 | 233.21 | 0.09 | |
| Carp | 43018.6 | Max WS | 31.11 | 91.96 | 94 | 94 | 0.27 | 227.28 | 0.09 | |
| Carp | 42975 | Max WS | 31.11 | 91.92 | 94 | 94 | 0.3 | 202.37 | 0.09 | |
| Carp | 42970.1 | Max WS | 31.11 | 91.92 | 94 | 94 | 0.38 | 210.25 | 0.09 | |
| Carp | 42951.2 | Max WS | 31.48 | 91.91 | 93.99 | 94 | 0.35 | 205.15 | 0.09 | |
| Carp | 42918.2 | Max WS | 31.48 | 91.91 | 93.99 | 93.99 | 0.34 | 217.93 | 0.09 | |
| Carp | 42913.5 | Max WS | 31.49 | 91.91 | 93.99 | 93.99 | 0.35 | 185.8 | 0.1 | |
| Carp | 42904.1 | Max WS | 31.48 | 91.9 | 93.99 | 93.99 | 0.35 | 145.36 | 0.1 | |
| Carp | 42890 | Max WS | 31.48 | 91.9 | 93.97 | 93.99 | 0.73 | 148.6 | 0.22 | |
| Carp | 42889 | Max WS | 31.47 | 91.8 | 93.95 | 93.18 | 94 | 1.24 | 268.26 | 0.29 |
| Carp | 42885 | Palladium Driv Bridge | | | | | | | | |
| Carp | 42855 | Max WS | 31.45 | 91.85 | 93.89 | 93.96 | 1.13 | 218.96 | 0.31 | |
| Carp | 42716 | Max WS | 31.47 | 91.75 | 93.9 | 93.91 | 0.39 | 159.19 | 0.1 | |
| Carp | 42700.9 | Max WS | 31.47 | 91.74 | 93.9 | 93.9 | 0.4 | 152.06 | 0.11 | |
| Carp | 42686 | Max WS | 31.47 | 91.73 | 93.9 | 93.9 | 0.43 | 137.94 | 0.12 | |
| Carp | 42558 | Max WS | 31.48 | 91.71 | 93.87 | 93.88 | 0.49 | 113.32 | 0.14 | |
| Carp | 42548.4 | Max WS | 32.39 | 91.7 | 93.86 | 93.88 | 0.52 | 114.84 | 0.14 | |
| Carp | 42410 | Max WS | 32.39 | 91.6 | 93.82 | 93.84 | 0.96 | 82.93 | 0.21 | |
| Carp | 42391.5 | Max WS | 32.38 | 91.59 | 93.81 | 93.84 | 0.98 | 79.5 | 0.22 | |
| Carp | 42212 | Max WS | 32.38 | 91.52 | 93.74 | 93.76 | 0.74 | 85.44 | 0.16 | |
| Carp | 42182 | Max WS | 32.34 | 91.51 | 93.65 | 93.07 | 93.77 | 1.53 | 93.85 | 0.42 |
| Carp | 42172 | Highway 417 S Bridge | | | | | | | | |
| Carp | 42154 | Max WS | 32.3 | 91.24 | 93.6 | 93.71 | 1.49 | 76.09 | 0.41 | |
| Carp | 42134 | Max WS | 32.34 | 91.51 | 93.64 | 93.69 | 1.01 | 83.29 | 0.28 | |
| Carp | 42124 | Max WS | 32.24 | 91.36 | 93.55 | 93.03 | 93.68 | 1.59 | 67.02 | 0.45 |
| Carp | 42119 | Highway 417 N Bridge | | | | | | | | |
| Carp | 42097 | Max WS | 32.2 | 91.49 | 93.53 | 93.63 | 1.41 | 41.59 | 0.37 | |
| Carp | 42075 | Max WS | 32.25 | 91.48 | 93.57 | 93.57 | 0.27 | 105.27 | 0.07 | |
| Carp | 42036 | Max WS | 32.25 | 91.47 | 93.56 | 93.57 | 0.23 | 153.39 | 0.07 | |
| Carp | 42002 | Max WS | 32.26 | 91.46 | 93.56 | 93.56 | 0.24 | 159.68 | 0.07 | |
| Carp | 41997.6 | Max WS | 32.33 | 91.46 | 93.56 | 93.56 | 0.26 | 154.14 | 0.07 | |
| Carp | 41970.1 | Max WS | 32.32 | 91.44 | 93.56 | 93.56 | 0.23 | 149.69 | 0.07 | |
| Carp | 41948.9 | Max WS | 32.35 | 91.44 | 93.56 | 93.56 | 0.3 | 186.48 | 0.08 | |
| Carp | 41896 | Max WS | 32.35 | 91.42 | 93.56 | 93.56 | 0.33 | 186.97 | 0.07 | |
| Carp | 41845.2 | Max WS | 32.35 | 91.4 | 93.55 | 93.56 | 0.33 | 152.87 | 0.08 | |
| Carp | 41836 | Max WS | 32.35 | 91.4 | 93.55 | 93.55 | 0.43 | 129.05 | 0.11 | |
| Carp | 41776 | Max WS | 32.35 | 91.38 | 93.54 | 93.55 | 0.53 | 151.67 | 0.13 | |
| Carp | 41769 | Max WS | 32.35 | 91.38 | 93.54 | 93.55 | 0.5 | 150.92 | 0.13 | |
| Carp | 41744 | Max WS | 32.38 | 91.36 | 93.54 | 93.54 | 0.27 | 154.77 | 0.08 | |

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|------|------------------------------|-------|-------|-------|-------|-------|------|--------|------|
| Carp | 41743 Max WS | 32.36 | 91.36 | 93.51 | 92.7 | 93.56 | 1.13 | 163.04 | 0.29 |
| Carp | 41738 Fut Transitway Bridge | | | | | | | | |
| Carp | 41725.5 Max WS | 32.37 | 91.35 | 93.52 | | 93.55 | 0.75 | 191.39 | 0.17 |
| Carp | 41671 Max WS | 32.37 | 91.35 | 93.53 | | 93.54 | 0.52 | 102.27 | 0.14 |
| Carp | 41608 Max WS | 40.14 | 91.32 | 93.5 | 92.26 | 93.53 | 0.78 | 110.1 | 0.18 |
| Carp | 41602 Future Campe Bridge | | | | | | | | |
| Carp | 41572 Max WS | 39.9 | 91.31 | 93.45 | | 93.48 | 0.79 | 110.1 | 0.19 |
| Carp | 41374.8 Max WS | 38.87 | 91.26 | 93.33 | | 93.45 | 1.88 | 110.6 | 0.47 |
| Carp | 41357 Max WS | 38.9 | 91.26 | 93.33 | | 93.38 | 1.15 | 241.14 | 0.42 |
| Carp | 41349.4 Max WS | 39.14 | 91.25 | 93.35 | | 93.35 | 0.14 | 328.19 | 0.05 |
| Carp | 41338 Max WS | 39.15 | 91.24 | 93.35 | | 93.35 | 0.13 | 287.34 | 0.05 |
| Carp | 41320 Max WS | 39.13 | 91.24 | 93.35 | | 93.35 | 0.17 | 288.82 | 0.04 |
| Carp | 41198 Max WS | 39.11 | 91.21 | 93.35 | | 93.35 | 0.2 | 247.13 | 0.05 |
| Carp | 41180 Max WS | 39.1 | 91.21 | 93.35 | | 93.35 | 0.16 | 215.41 | 0.04 |
| Carp | 41125.4 Max WS | 39.12 | 91.21 | 93.34 | | 93.35 | 0.22 | 213.65 | 0.05 |
| Carp | 41117 Max WS | 39.06 | 91.2 | 93.34 | | 93.35 | 0.4 | 195.65 | 0.11 |
| Carp | 41071 Max WS | 39.37 | 91.18 | 93.34 | | 93.34 | 0.18 | 352.86 | 0.05 |
| Carp | 40965.2 Max WS | 39.39 | 91.14 | 93.34 | | 93.34 | 0.21 | 336.23 | 0.05 |
| Carp | 40956 Max WS | 39.38 | 91.14 | 93.34 | | 93.34 | 0.27 | 178.88 | 0.07 |
| Carp | 40919.2 Max WS | 39.4 | 91.12 | 93.33 | | 93.34 | 0.39 | 188.83 | 0.1 |
| Carp | 40910 Max WS | 39.41 | 91.12 | 93.34 | | 93.34 | 0.14 | 208.2 | 0.04 |
| Carp | 40703 Max WS | 39.39 | 91.05 | 93.33 | | 93.33 | 0.17 | 200.44 | 0.04 |
| Carp | 40688.5 Max WS | 40.14 | 91.04 | 93.33 | | 93.33 | 0.49 | 190 | 0.12 |
| Carp | 40640.2 Max WS | 40.11 | 91.03 | 93.33 | | 93.33 | 0.33 | 317.35 | 0.08 |
| Carp | 40505 Max WS | 40.11 | 91 | 93.32 | | 93.32 | 0.28 | 256.65 | 0.07 |
| Carp | 40423.5 Max WS | 40.1 | 90.97 | 93.31 | | 93.32 | 0.24 | 300.2 | 0.06 |
| Carp | 40415 Max WS | 40.1 | 90.96 | 93.31 | | 93.32 | 0.21 | 371.45 | 0.05 |
| Carp | 40348.1 Max WS | 40.11 | 90.95 | 93.31 | | 93.31 | 0.19 | 344.86 | 0.04 |
| Carp | 40339.7 Max WS | 40.1 | 90.95 | 93.31 | | 93.31 | 0.11 | 342.19 | 0.03 |
| Carp | 40298 Max WS | 40.11 | 90.93 | 93.31 | | 93.31 | 0.12 | 397.25 | 0.03 |
| Carp | 40262.9 Max WS | 40.54 | 90.92 | 93.31 | | 93.31 | 0.15 | 374.69 | 0.03 |
| Carp | 40113.9 Max WS | 40.52 | 90.88 | 93.31 | | 93.31 | 0.29 | 298.28 | 0.07 |
| Carp | 40092 Max WS | 40.52 | 90.87 | 93.3 | | 93.32 | 0.65 | 292.67 | 0.15 |
| Carp | 40077.6 Max WS | 40.9 | 91.07 | 93.23 | | 93.3 | 1.26 | 280.1 | 0.3 |
| Carp | 40071.5 Max WS | 39.44 | 91.15 | 93.04 | | 93.27 | 2.14 | 205.77 | 0.55 |
| Carp | 40070 Richardson Sic Culvert | | | | | | | | |
| Carp | 40050 Max WS | 40.36 | 91.15 | 93.09 | | 93.28 | 1.94 | 199.56 | 0.47 |
| Carp | 40035.1 Max WS | 40.7 | 91.13 | 93.16 | | 93.16 | 0.51 | 245.55 | 0.13 |
| Carp | 39892 Max WS | 40.52 | 90.99 | 93.11 | | 93.13 | 0.58 | 190.34 | 0.15 |
| Carp | 39695 Max WS | 40.26 | 90.78 | 93.05 | | 93.06 | 0.57 | 207.11 | 0.16 |
| Carp | 39400 Max WS | 39.6 | 90.66 | 92.96 | | 92.97 | 0.62 | 296.96 | 0.15 |
| Carp | 39202 Max WS | 39.33 | 90.57 | 92.92 | | 92.93 | 0.42 | 355.5 | 0.09 |
| Carp | 39102 Max WS | 39.26 | 90.47 | 92.92 | | 92.92 | 0.37 | 476.78 | 0.08 |
| Carp | 39002 Max WS | 39.2 | 90.37 | 92.91 | | 92.91 | 0.4 | 442.06 | 0.09 |
| Carp | 38902 Max WS | 39.17 | 90.27 | 92.9 | | 92.9 | 0.34 | 385.8 | 0.08 |
| Carp | 38697 Max WS | 39.13 | 90.07 | 92.89 | | 92.89 | 0.22 | 419.13 | 0.05 |
| Carp | 38692.5 Max WS | 39.34 | 90.07 | 92.89 | | 92.89 | 0.19 | 408.08 | 0.05 |
| Carp | 38236 Max WS | 39.31 | 90.16 | 92.86 | | 92.86 | 0.37 | 369.29 | 0.08 |
| Carp | 37894 Max WS | 56.72 | 90.03 | 92.81 | | 92.82 | 0.42 | 370.06 | 0.09 |
| Carp | 37869.5 Max WS | 56.67 | 90.01 | 92.81 | | 92.82 | 0.41 | 372.29 | 0.09 |
| Carp | 37390.4 Max WS | 56.39 | 89.68 | 92.78 | | 92.78 | 0.35 | 409.14 | 0.07 |
| Carp | 37380.4 Max WS | 55.97 | 89.67 | 92.72 | 91.49 | 92.91 | 1.91 | 397.57 | 0.38 |

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|------|---------|------------|--------|-------|-------|-------|-------|--------|--------|------|
| Carp | 37370 | Huntmar | Bridge | | | | | | | |
| Carp | 37355.4 | Max WS | 52.87 | 89.66 | 92.57 | 92.75 | 1.92 | 364.94 | 0.39 | |
| Carp | 37101 | Max WS | 53.44 | 89.48 | 92.59 | 92.59 | 0.35 | 355.38 | 0.07 | |
| Carp | 36580 | Max WS | 53.03 | 89.1 | 92.56 | 92.56 | 0.29 | 401.34 | 0.05 | |
| Carp | 35288 | Max WS | 52.61 | 89.05 | 92.46 | 92.47 | 0.64 | 295.32 | 0.12 | |
| Carp | 35073 | Max WS | 52.55 | 89.27 | 92.41 | 92.43 | 0.69 | 167.17 | 0.13 | |
| Carp | 34555 | Max WS | 52.41 | 89.06 | 92.26 | 92.3 | 0.96 | 134.76 | 0.18 | |
| Carp | 33472 | Max WS | 52.3 | 88.54 | 92.08 | 92.08 | 0.53 | 221.36 | 0.09 | |
| Carp | 33201 | Max WS | 53.01 | 89.15 | 91.97 | 90.52 | 92.04 | 1.21 | 256.6 | 0.25 |
| Carp | 33197 | March Road | Bridge | | | | | | | |
| Carp | 33181 | Max WS | 52.99 | 89.16 | 91.92 | 92 | 1.24 | 248.44 | 0.26 | |
| Carp | 32609 | Max WS | 52.93 | 89.56 | 91.76 | 91.77 | 0.62 | 268.77 | 0.14 | |
| Carp | 32096 | Max WS | 52.91 | 88.9 | 91.65 | 91.66 | 0.58 | 279.43 | 0.13 | |
| Carp | 31662 | Max WS | 52.87 | 88.74 | 91.48 | 90.27 | 91.54 | 1.36 | 133.11 | 0.27 |
| Carp | 31658 | Carp Road | Bridge | | | | | | | |
| Carp | 31642 | Max WS | 52.84 | 88.74 | 91.46 | 91.52 | 1.37 | 132.87 | 0.27 | |
| Carp | 31414 | Max WS | 57.71 | 88.89 | 91.29 | 90.79 | 91.33 | 1.25 | 116.52 | 0.28 |