# APPENDIX A - HYDRAULIC ANALYSIS - DRAINAGE BASINS

# Appendix A1 Little Llagas Creek Capacities and Design Flows
## Storm Drainage Master Plan
## City of Morgan Hill

| HEC1 OPER | PIPE NODE NAME | TYPE | LOCATION | PIPE SIZE (in) | SLOPE | PIPE EXIST CAP (cfs) | PIPE 10-YR FUTURE dia (in) | PIPE 100-YR FUTURE dia (in) | DITCH 100-YR FUTURE width (ft) | STREET CAPACITY 40 ft/.025 (cfs) | 100 YR EXIST EXCESS FLOW >10 (cfs) | 100 YR 2020 EXCESS FLOW >10 (cfs) | 10-YR EXIST HEC1 (cfs) | 10-YR 2020 HEC-1 (cfs) | 100-YR EXIST HEC-1 (cfs) | 100-YR 2020 HEC-1 (cfs) | 100 YR VOL 2020 (ac ft) | AREA (sq. mi.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LLL10 | | ditch | | | 0.1060 | | 18 | 24 | 3 | 143 | | | 36 | 36 | 77 | 77 | 38 | 0.18 |
| LLL15 | | ditch | | | 0.1130 | | 24 | 30 | 3 | 148 | | | 60 | 60 | 117 | 117 | 54 | 0.22 |
| R20A | | ditch | Llagas Rd. | | 0.0190 | | 30 | 42 | 4 | 61 | | | 60 | 60 | 117 | 117 | 54 | 0.22 |
| LLL17 | TER1 | pipe | | 24 | 0.1860 | 85 | 12 | 18 | | 190 | | | 14 | 15 | 27 | 29 | 10 | 0.04 |
| P17 | TER1 | pond | #24 Llagas Hills Estate Tract 8135 | | | | | | | | | | 11 | 11 | 27 | 27 | 10 | 0.04 |
| R20B | | ditch | | | 0.0150 | | 18 | 24 | 3 | 54 | | | 11 | 11 | 27 | 27 | 10 | 0.04 |
| C15 | TER1 | pipe | Teresa Ln. | 24 | 0.0311 | 35 | 30 | 42 | | 78 | 32 | 32 | 71 | 71 | 144 | 144 | 64 | 0.26 |
| LLL20 | | ditch | | | 0.0200 | | 24 | 30 | 4 | 62 | | | 29 | 31 | 61 | 62 | 24 | 0.11 |
| C10 | | LLL | | | 0.0030 | | | | 7 | | | | 98 | 98 | 204 | 204 | 90 | 0.37 |
| C17 | | LLL | | | 0.0030 | | | | 8 | | | | 134 | 134 | 280 | 280 | 128 | 0.56 |
| LLL25 | | ditch | | | 0.0040 | | 48 | 66 | 6 | 28 | | | 79 | 79 | 167 | 167 | 68 | 0.32 |
| P25 | CAS22 | pond | #25 Castle Hill Tract 7678 | | | | | | | | | | 70 | 70 | 163 | 163 | 68 | 0.32 |
| C20 | | LLL | | | 0.0030 | | | | 10 | | | | 200 | 200 | 442 | 442 | 196 | 0.88 |
| R30 | | LLL | | | 0.0030 | | | | 10 | | | | 199 | 199 | 441 | 441 | 196 | 0.88 |
| LLL30 | | ditch | | | 0.0030 | | 24 | 30 | 3 | 24 | | | 11 | 11 | 22 | 22 | 10 | 0.05 |
| C25 | | LLL | Llagas Rd. | | 0.0030 | | | | 10 | | | | 211 | 211 | 463 | 463 | 206 | 0.92 |
| LLL35 | LLA63 | pipe | | 36 | 0.0030 | 32 | 36 | 48 | | 24 | 13 | 13 | 34 | 34 | 69 | 69 | 32 | 0.13 |
| C30 | | LLL | Llagas Vista/L. Llaga | | 0.0030 | | | | 10 | | | | 239 | 239 | 531 | 531 | 238 | 1.06 |
| R42 | | LLL | | | 0.0030 | | | | 10 | | | | 243 | 243 | 531 | 531 | 238 | 1.06 |
| LLL40 | | pipe | | 36 | 0.0200 | 82 | 36 | 42 | | 62 | | | 71 | 71 | 134 | 134 | 42 | 0.17 |
| C35 | | LLL | Eagle Springs/L. Llag | | 0.0030 | | | | 11 | | | | 283 | 283 | 640 | 640 | 280 | 1.23 |
| LLL42 | LLA64 | pipe | | 36 | 0.0040 | 37 | 18 | 24 | | 28 | | | 5 | 5 | 9 | 9 | 4 | 0.02 |
| C40 | | LLL | Llagas Rd./L. Llagas | | 0.0030 | | | | 11 | | | | 285 | 285 | 646 | 646 | 284 | 1.25 |
| LLL45 | LLA71 | pipe | | 18 | 0.0340 | 17 | 18 | 18 | | 81 | | | 9 | 11 | 17 | 20 | 8 | 0.04 |
| C42 | | LLL | Sparhawk/L. Llagas c | | 0.0030 | | | | 11 | | | | 293 | 293 | 662 | 662 | 292 | 1.28 |
| R60 | | LLL | | | 0.0030 | | | | 11 | | | | 292 | 292 | 659 | 659 | 292 | 1.28 |
| LLL50 | | street | Hale Ave. | | 0.0040 | | 18 | 18 | | 28 | | | 4 | 4 | 7 | 7 | 2 | 0.01 |
| R55 | | ditch | Hale Ave. | | 0.0090 | | 12 | 18 | 2 | 42 | | | 4 | 4 | 7 | 7 | 2 | 0.01 |
| LLL55 | | ditch | | | 0.0090 | | 24 | 30 | 3 | 42 | | | 13 | 19 | 23 | 33 | 10 | 0.04 |
| C50 | | ditch | Hale Ave./L. Llagas c | | 0.0090 | | 24 | 30 | 3 | 42 | | | 14 | 21 | 26 | 36 | 12 | 0.05 |
| C45 | | LLL | Millwood/L. Llagas ch | | 0.0030 | | | | 11 | | | | 302 | 302 | 682 | 682 | 304 | 1.33 |
| LLL60 | | ditch | | | 0.0570 | | 12 | 18 | 2 | 105 | | | 9 | 11 | 17 | 20 | 6 | 0.02 |
| C55 | | LLL | L. Llagas channel | | 0.0030 | | | | 11 | | | | 306 | 306 | 691 | 691 | 308 | 1.35 |
| LLL65 | | street | | | 0.0010 | | 36 | 42 | | 14 | | | 10 | 20 | 19 | 33 | 12 | 0.04 |
| C60 | DEL90 | LLL | L. Llagas channel | | 0.0030 | | | | 11 | | | | 315 | 315 | 709 | 709 | 320 | 1.39 |
| R70 | DEL92 | LLL | Christine | | 0.0030 | | | | 11 | | | | 314 | 314 | 700 | 700 | 320 | 1.39 |
| LLL70 | HAL40 | pipe | | 36 | 0.0020 | 26 | 30 | 30 | | 20 | | | 13 | 13 | 20 | 20 | 6 | 0.02 |
| C65 | HAL41 | LLL | Hale/Christine | | 0.0030 | | | | 11 | | | | 318 | 318 | 709 | 709 | 324 | 1.41 |
| LLL75 | | pipe | | 15 | 0.0040 | 4 | 18 | 24 | | 28 | | | 7 | 7 | 11 | 12 | 2 | 0.01 |
| C70 | | LLL | Millwood/Hale | | 0.0025 | | | | 12 | | | | 320 | 320 | 713 | 713 | 328 | 1.42 |
| R80 | | LLL | Hale | | 0.0025 | | | | 12 | | | | 319 | 319 | 712 | 712 | 328 | 1.42 |
| LLL80 | HAL45 | pipe | | 30 | 0.0020 | 16 | 42 | 48 | | 20 | 17 | 17 | 34 | 34 | 53 | 53 | 18 | 0.07 |
| C75 | | LLL | Wright/Hale | | 0.0025 | | | | 12 | | | | 333 | 333 | 741 | 741 | 346 | 1.49 |
| LLL82 | HAL44 | pipe | | 24 | 0.0100 | 20 | 24 | 30 | | 44 | | | 18 | 25 | 31 | 41 | 10 | 0.04 |
| C80 | | LLL | Wright/Hale | | 0.0025 | | | | 12 | | | | 340 | 340 | 760 | 760 | 356 | 1.53 |
| R90 | | LLL | Wright/L. Llagas ch. | | 0.0025 | | | | 12 | | | | 339 | 339 | 756 | 756 | 356 | 1.53 |
| LLL85 | HAL48 | pipe | | 18 | 0.0060 | 7 | 24 | 30 | | 34 | | | 16 | 16 | 27 | 27 | 6 | 0.03 |
| C82 | | LLL | Hale | | 0.0025 | | | | 12 | | | | 343 | 343 | 765 | 765 | 362 | 1.55 |
| LLL90 | | pipe | | 12 | 0.0030 | 2 | 30 | 36 | | 24 | | | 17 | 17 | 28 | 28 | 8 | 0.03 |
| C85 | | LLL | L. Llagas channel | | 0.0025 | | | | 12 | | | | 350 | 350 | 780 | 780 | 370 | 1.58 |
| LLL95 | HAL49 | pipe | | 24 | 0.0010 | 6 | 36 | 42 | | 14 | | | 16 | 18 | 26 | 27 | 10 | 0.04 |
| C90 | | LLL | L. Llagas channel | | 0.0025 | | | | 12 | | | | 357 | 357 | 796 | 796 | 380 | 1.62 |
| LLL100 | | ditch | | | 0.1900 | | 12 | 18 | 2 | 192 | | | 19 | 19 | 36 | 36 | 14 | 0.06 |
| R105 | PEA20 | pipe | | 18 | 0.0670 | 24 | 18 | 18 | | 114 | | | 19 | 19 | 35 | 35 | 14 | 0.06 |
| LLL105 | PEA21 | pipe | | 18 | 0.0420 | 19 | 18 | 24 | | 90 | | | 25 | 25 | 42 | 42 | 12 | 0.04 |
| C100 | CRE10 | pipe | Peak Ave. | 24 | 0.0175 | 26 | 30 | 36 | | 58 | | | 42 | 42 | 74 | 74 | 26 | 0.1 |
| R110 | HAL49 | pipe | Rest Ave. | 24 | 0.0170 | 26 | 30 | 36 | | 57 | | | 42 | 42 | 74 | 74 | 26 | 0.1 |
| LLL110 | HAL49 | pipe | | 24 | 0.0050 | 14 | 36 | 42 | | 31 | | | 35 | 35 | 55 | 55 | 12 | 0.04 |
| C105 | CRE10 | pipe | L. Llagas chan | 24 | 0.0037 | 12 | 48 | 60 | | 27 | 88 | 88 | 74 | 74 | 127 | 127 | 38 | 0.14 |
| C95 | | LLL | L. Llagas channel | | 0.0025 | | | | 13 | | | | 395 | 395 | 863 | 863 | 416 | 1.76 |
| R112 | | LLL | Hale Ave/L. Llagas ch | | 0.0025 | | | | 13 | | | | 394 | 394 | 860 | 860 | 416 | 1.76 |
| LLL112 | HAL50 | pipe | | 30 | 0.0020 | 16 | 42 | 48 | | 20 | 16 | 16 | 34 | 34 | 52 | 52 | 14 | 0.05 |
| C110 | | LLL | Hale/Main | | 0.0025 | | | | 13 | | | | 406 | 406 | 879 | 879 | 430 | 1.81 |
| LLL115 | | street | Hale Ave. | | 0.0030 | | 24 | 30 | | 24 | | | 10 | 10 | 15 | 15 | 4 | 0.01 |
| C112 | | LLL | L. Llagas channel | | 0.0025 | | | | 13 | | | | 409 | 409 | 880 | 880 | 432 | 1.82 |
| LLL120 | DEW30 | pipe | | 18 | 0.1900 | 40 | 18 | 18 | | 192 | | | 29 | 29 | 51 | 51 | 16 | 0.06 |
| R125 | MAI51 | pipe | | 18 | 0.0290 | 16 | 24 | 30 | | 75 | | | 29 | 29 | 50 | 50 | 16 | 0.06 |
| LLL125 | MAI51 | pipe | | 18 | 0.0370 | 18 | 24 | 30 | | 85 | | | 40 | 40 | 66 | 66 | 16 | 0.06 |
| C120 | MAI52 | pipe | W. Main/Peak | 18 | 0.0290 | 16 | 30 | 36 | | 75 | 23 | 23 | 67 | 67 | 113 | 113 | 32 | 0.12 |
| R130 | | ditch | W. Main | | 0.0190 | | 36 | 42 | 4 | 61 | | | 67 | 67 | 113 | 113 | 32 | 0.12 |
| LLL130 | | pipe | | 30 | 0.0110 | 37 | 24 | 30 | | 46 | | | 20 | 20 | 31 | 31 | 6 | 0.02 |
| C125 | MAI55 | pipe | Main/Hale | 24 | 0.0184 | 27 | 36 | 42 | | 60 | 54 | 54 | 84 | 84 | 140 | 140 | 38 | 0.14 |
| C115 | | LLL | L. Llagas channel | | 0.0025 | | | | 13 | | | | 448 | 448 | 950 | 950 | 470 | 1.96 |
| LLL135 | HAL55 | pipe | | 15 | 0.0570 | 13 | 24 | 30 | | 105 | | | 41 | 46 | 64 | 71 | 16 | 0.05 |
| C130 | | LLL | Hale/L. Llagas ch. | | 0.0025 | | | | 13 | | | | 462 | 462 | 973 | 973 | 486 | 2.02 |
| R140 | | LLL | L. Llagas channel | | 0.0025 | | | | 13 | | | | 460 | 460 | 969 | 969 | 486 | 2.02 |
| LLL140 | MAI56 | pipe | | 18 | 0.0020 | 4 | 36 | 42 | | 20 | 19 | 19 | 27 | 27 | 43 | 43 | 10 | 0.04 |
| C135 | | LLL | Del Monte | | 0.0025 | | | | 13 | | | | 469 | 469 | 984 | 984 | 496 | 2.06 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R142 | | LLL | L. Llagas channel | | 0.0025 | | | | 13 | | | | 468 | 468 | 980 | 980 | 496 | 2.06 |
| LLL142 | | street | W. 2nd st. | | 0.0020 | | 18 | 24 | | 20 | | | 5 | 5 | 8 | 8 | 2 | 0.01 |
| C140 | | LLL | Monterey/L. Llagas cl | | 0.0025 | | | | 13 | | | | 469 | 469 | 983 | 983 | 498 | 2.06 |
| LLL145 | | street | W. 3rd | | 0.0300 | | 24 | 24 | | 76 | | | 14 | 24 | 24 | 37 | 6 | 0.03 |
| C142 | | LLL | W. 3rd/L. Llagas ch. | | 0.0025 | | | | 13 | | | | 474 | 474 | 991 | 991 | 504 | 2.09 |
| LLL150 | MON85 | pipe | | 27 | 0.0040 | | 36 | 42 | | 28 | 20 | 20 | 32 | 32 | 48 | 48 | 10 | 0.04 |
| C145 | | LLL | Monterey/E. 4th | | 0.0025 | | | | 13 | | | | 483 | 483 | 1005 | 1005 | 514 | 2.13 |
| R155 | | LLL | L. Llagas channel | | 0.0025 | | | | 13 | | | | 482 | 482 | 1002 | 1002 | 514 | 2.13 |
| LLL155 | | ditch | | | 0.0160 | | 24 | 30 | 3 | 56 | | | 18 | 33 | 31 | 51 | 10 | 0.04 |
| C150 | | LLL | W. 5th | | 0.0025 | | | | 13 | | | | 492 | 492 | 1018 | 1018 | 524 | 2.17 |
| LLL160 | | street | Montery / E. 5th | | 0.0030 | | 24 | 24 | | 24 | | | 9 | 9 | 13 | 13 | 2 | 0.01 |
| C155 | | LLL | W. Dunne | | 0.0025 | | | | 13 | | | | 494 | 494 | 1022 | 1022 | 526 | 2.18 |
| R165 | | LLL | L. Llagas channel | | 0.0025 | | | | 13 | | | | 491 | 491 | 1013 | 1013 | 526 | 2.18 |
| LLL165 | | STREET | | | 0.0030 | | 24 | 30 | | 24 | | | 12 | 12 | 19 | 19 | 4 | 0.01 |
| C160 | | LLL | Ciolino/L. Llagas ch. | | 0.0025 | | | | 13 | | | | 494 | 494 | 1018 | 1018 | 530 | 2.19 |
| LLL177 | | ditch | | | 0.1710 | | 12 | 18 | 2 | 182 | | | 19 | 19 | 36 | 36 | 16 | 0.06 |
| R180 | | ditch | Alkire Dr. | | 0.0230 | | 18 | 24 | 3 | 67 | | | 19 | 19 | 36 | 36 | 16 | 0.06 |
| LLL180 | | pipe | | 18 | 0.0110 | 10 | 24 | 30 | | 46 | | | 18 | 18 | 31 | 31 | 8 | 0.03 |
| C177 | | pipe | W. Dunne/Pie | 30 | 0.0320 | 64 | 24 | 30 | | 79 | | | 29 | 30 | 54 | 55 | 24 | 0.09 |
| LLL185 | | pipe | | 21 | 0.0500 | 31 | 18 | 24 | | 98 | | | 19 | 20 | 37 | 39 | 16 | 0.07 |
| C180 | WDU11 | pipe | W. Dunne/Alk | 21 | 0.0522 | **32** | 24 | 30 | | 101 | | | 48 | 50 | 89 | 93 | 42 | 0.16 |
| R195 | WDU12 | pipe | W. Dunne | 24 | 0.0400 | **45** | 24 | 36 | | 88 | | | 48 | 50 | 89 | 93 | 42 | 0.16 |
| LLL190 | | pipe | | 36 | 0.0040 | 37 | 30 | 36 | | 28 | | | 22 | 22 | 37 | 37 | 10 | 0.03 |
| C185 | WDU13 | pipe | Peak/W. Dun | 36 | 0.0071 | **65** | 42 | 54 | | 37 | 23 | 27 | 69 | 72 | 125 | 129 | 50 | 0.2 |
| LLL195 | | street | Lasevla | | 0.0300 | | 18 | 24 | | 76 | | | 22 | 22 | 35 | 35 | 8 | 0.03 |
| C190 | WDU15 | pipe | Peak/W. Dun | 39 | 0.0316 | **84** | 36 | 42 | | 78 | | | 89 | 91 | 157 | 161 | 58 | 0.23 |
| R197 | WDU17 | pipe | W. Dunne | 42 | 0.0060 | **171** | 48 | 60 | | 34 | | | 87 | 90 | 155 | 159 | 58 | 0.23 |
| LLL197 | | ditch | | | 0.0290 | | 18 | 18 | 2 | 75 | | | 8 | 11 | 13 | 17 | 4 | 0.01 |
| C195 | EDW1 | pipe | Edwin Jones | 60 | 0.0074 | **214** | 48 | 60 | | 38 | | | 94 | 98 | 166 | 172 | 62 | 0.24 |
| LLL198 | | ditch | | | 0.0290 | | 18 | 24 | 3 | 75 | | | 7 | 16 | 13 | 25 | 6 | 0.02 |
| C197 | CHA1 | pipe | Chargin | 60 | 0.0158 | **149** | 42 | 54 | | 55 | | | 110 | 110 | 178 | 190 | 66 | 0.26 |
| LLL205 | | ditch | | | 0.1140 | | 18 | 18 | 2 | 149 | | | 23 | 23 | 46 | 46 | 20 | 0.08 |
| LLL210 | DEW1 | pipe | | 12 | 0.0570 | **26** | 18 | 24 | | 105 | | | 21 | 21 | 37 | 37 | 12 | 0.05 |
| C205 | SAN70 | pipe | Dewitt | 24 | 0.0186 | **44** | 30 | 36 | | 60 | | | 37 | 37 | 73 | 73 | 32 | 0.13 |
| R215 | SAN71 | pipe | | 24 | 0.0180 | **48** | 30 | 36 | | 59 | | | 37 | 37 | 73 | 73 | 32 | 0.13 |
| LLL215 | | pipe | | 24 | 0.0210 | 28 | 18 | 24 | | 64 | | | 9 | 13 | 16 | 20 | 4 | 0.02 |
| C210 | SAN71 | pipe | Evergreen | 24 | 0.0349 | **48** | 24 | 30 | | 82 | | | 45 | 45 | 85 | 85 | 36 | 0.14 |
| LLL220 | | ditch | | | 0.0630 | | 24 | 30 | 3 | 110 | | | 37 | 37 | 75 | 75 | 32 | 0.14 |
| LLL225 | | pipe | | 15 | 0.0230 | 9 | 18 | 24 | | 67 | | | 17 | 17 | 29 | 29 | 8 | 0.03 |
| C220 | | pipe | Willow Cr./Ch | 30 | 0.0214 | 52 | 30 | 36 | | 64 | | | 46 | 47 | 92 | 93 | 40 | 0.17 |
| C215 | SAN72 | pipe | Willow Cr./Ch | 60 | 0.0214 | **55** | 36 | 48 | | 64 | 56 | 57 | 89 | 90 | 176 | 177 | 76 | 0.32 |
| R235 | CHA2 | pipe | Chargin | 60 | 0.0150 | **421** | 42 | 48 | | 54 | | | 89 | 90 | 176 | 177 | 76 | 0.32 |
| LLL235 | | pipe | | 12 | 0.0060 | 2 | 18 | 24 | | 34 | | | 9 | 9 | 15 | 15 | 4 | 0.01 |
| C225 | CHA2 | pipe | Chargin/Lone | 60 | 0.0158 | **421** | 42 | 54 | | 55 | | | 93 | 98 | 185 | 186 | 80 | 0.33 |
| C198 | CHA3 | pipe | Chargin | 66 | 0.0158 | **239** | 54 | 66 | | 55 | 62 | 80 | 194 | 206 | 356 | 374 | 146 | 0.59 |
| R240 | BAR11 | pipe | Chargin | 72 | 0.0130 | **453** | 54 | 66 | | 50 | | | 193 | 206 | 356 | 373 | 146 | 0.59 |
| LLL240 | | pipe | | 72 | 0.0130 | 420 | 30 | 36 | | 50 | | | 42 | 46 | 68 | 73 | 18 | 0.06 |
| C235 | DEL5 | pipe | Ciolino/L. Llag | 72 | 0.0138 | **394** | 60 | 72 | | 52 | | | 234 | 251 | 422 | 444 | 164 | 0.65 |
| C165 | | LLL | L. Llagas channel | | 0.0025 | | | | 15 | | | | 666 | 675 | 1326 | 1326 | 694 | 2.84 |
| R242 | | LLL | L. Llagas channel | | 0.0025 | | | | 15 | | | | 666 | 669 | 1324 | 1324 | 694 | 2.84 |
| LLL242 | | pipe | | 12 | 0.0010 | 1 | 24 | 30 | | 14 | | | 7 | 7 | 11 | 11 | 2 | 0.01 |
| C240 | | LLL | Spring/L. Llagas ch. | | 0.0025 | | | | 15 | | | | 668 | 672 | 1328 | 1328 | 696 | 2.85 |
| LLL244 | | pipe | | 12 | 0.0030 | 2 | 24 | 24 | | 24 | | | 8 | 8 | 12 | 12 | 2 | 0.01 |
| C242 | | LLL | L. Llagas channel | | 0.0025 | | | | 15 | | | | 670 | 675 | 1332 | 1332 | 698 | 2.86 |
| LLL245 | CHU1 | pipe | | 30 | 0.0060 | **34** | 36 | 42 | | 34 | | | 38 | 38 | 60 | 60 | 14 | 0.05 |
| R246 | CHU2 | pipe | Church | 36 | 0.0010 | **42** | 42 | 48 | | 14 | | | 27 | 27 | 43 | 43 | 14 | 0.05 |
| LLL246 | | pipe | | 36 | 0.0010 | 18 | 42 | 48 | | 14 | | | 28 | 28 | 42 | 42 | 12 | 0.04 |
| C245 | SPR55 | pipe | Spring/L. Llag | 42 | 0.0010 | **30** | 54 | 66 | | 14 | 41 | 41 | 54 | 54 | 85 | 85 | 26 | 0.09 |
| C244 | | LLL | L. Llagas channel | | 0.0025 | | | | 15 | | | | 697 | 708 | 1369 | 1369 | 724 | 2.95 |
| LLL247 | SPR50 | ditch | | | 0.0430 | | 12 | 18 | 2 | 91 | | | 8 | 9 | 16 | 17 | 6 | 0.02 |
| R248 | SPR50 | pipe | Spring | 18 | 0.0160 | **10** | 18 | 18 | | 56 | | | 8 | 9 | 16 | 17 | 6 | 0.02 |
| LLL248 | | pipe | | 18 | 0.0160 | 12 | 30 | 30 | | 56 | | | 32 | 34 | 50 | 54 | 10 | 0.04 |
| C247 | SPR54 | pipe | Spring/L. Llag | 18 | 0.0165 | 12 | 30 | 36 | | 57 | | | 37 | 41 | 60 | 67 | 16 | 0.06 |
| C246 | | LLL | L. Llagas channel | | 0.0025 | | | | 15 | | | | 720 | 731 | 1396 | 1396 | 740 | 3.01 |
| R250 | | LLL | L. Llagas channel | | 0.0025 | | | | 15 | | | | 717 | 729 | 1393 | 1393 | 740 | 3.01 |
| LLL250 | | pipe | | 12 | 0.0080 | 3 | 18 | 18 | | 39 | | | 7 | 7 | 12 | 12 | 4 | 0.01 |
| C248 | | LLL | L. Llagas channel | | 0.0025 | | | | 15 | | | | 721 | 733 | 1399 | 1399 | 742 | 3.03 |
| LLL252 | MON34 | pipe | | 24 | 0.0050 | 14 | 30 | 36 | | 31 | | | 31 | 31 | 48 | 48 | 10 | 0.04 |
| C250 | | LLL | L. Llagas channel | | 0.0025 | | | | 15 | | | | 732 | 744 | 1412 | 1412 | 752 | 3.06 |
| LLL254 | DEC21 | pipe | | 36 | 0.0100 | 58 | 24 | 24 | | 44 | | | 12 | 15 | 21 | 24 | 6 | 0.02 |
| R256 | DEC21 | ditch | L. Llagas channel | | 0.0025 | | 30 | 30 | 4 | 22 | | | 11 | 14 | 20 | 22 | 6 | 0.02 |
| LLL256 | | street | | | 0.0080 | | 30 | 36 | | 39 | | | 28 | 31 | 44 | 47 | 8 | 0.03 |
| C254 | COS23 | pipe | Cosmo/L. Llag | 36 | 0.0020 | 26 | 42 | 48 | | 20 | 12 | 18 | 36 | 40 | 58 | 64 | 14 | 0.05 |
| C252 | | LLL | L. Llagas channel | | 0.0025 | | | | 15 | | | | 749 | 762 | 1433 | 1433 | 766 | 3.11 |
| LLL260 | | street | Montery/Cosmo | | 0.0080 | | 24 | 30 | | 39 | | | 14 | 20 | 22 | 31 | 6 | 0.02 |
| C256 | | LLL | L. Llagas channel | | 0.0025 | | | | 15 | | | | 755 | 768 | 1441 | 1441 | 770 | 3.13 |
| R270 | | LLL | L. Llagas channel | | 0.0025 | | | | 15 | | | | 736 | 745 | 1416 | 1416 | 770 | 3.13 |
| LLL265 | | street | Edes Ct./L. Llagas ch | | 0.0040 | | 18 | 24 | | 28 | | | 6 | 8 | 10 | 13 | 4 | 0.01 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C260 | | LLL | Edes Ct./L. Llagas ch | | 0.0025 | | | | 15 | | | | 739 | 749 | 1421 | 1421 | 772 | 3.14 |
| LLL270 | | street | Edes Ct./L. Llagas ch | | 0.0030 | | 30 | 36 | | 24 | | | 16 | 18 | 26 | 29 | 6 | 0.03 |
| C265 | | LLL | Edmundson/L. Llagas | | 0.0025 | | | | 15 | | | | 747 | 757 | 1433 | 1433 | 780 | 3.17 |
| LLL272 | | street | Edmunson/montery | | 0.0020 | | 24 | 30 | | 20 | | | 12 | 12 | 18 | 18 | 4 | 0.01 |
| C270 | | LLL | Edmundson/L. Llagas | | 0.0025 | | | | 15 | | | | 750 | 762 | 1439 | 1439 | 784 | 3.19 |
| LLL275 | CHU11 | pipe | | 18 | 0.0030 | **39** | 36 | 42 | | 24 | | | 21 | 27 | 33 | 41 | 8 | 0.03 |
| R280 | CHU12 | pipe | Church | 36 | 0.0050 | **47** | 30 | 36 | | 31 | | | 21 | 27 | 32 | 41 | 8 | 0.03 |
| LLL280 | | pipe | | 36 | 0.0050 | 41 | 30 | 36 | | 31 | | | 28 | 28 | 43 | 43 | 10 | 0.03 |
| C275 | CHU12 | pipe | Church/Barret | 36 | 0.0053 | **47** | 36 | 48 | | 32 | | | 45 | 51 | 71 | 79 | 18 | 0.06 |
| R285 | CHU13 | pipe | Church | 48 | 0.0020 | **47** | 48 | 54 | | 20 | | | 41 | 47 | 63 | 70 | 18 | 0.06 |
| LLL285 | | pipe | | 42 | 0.0020 | 39 | 36 | 48 | | 20 | | | 31 | 31 | 49 | 49 | 14 | 0.05 |
| C280 | CHU14 | pipe | Church/Edmu | 42 | 0.0030 | **55** | 48 | 60 | | 24 | 29 | 35 | 69 | 74 | 108 | 114 | 30 | 0.11 |
| R295 | TEN31 | pipe | Church | 48 | 0.0020 | **65** | 54 | 60 | | 20 | 16 | 22 | 65 | 70 | 100 | 106 | 30 | 0.11 |
| LLL295 | | pipe | | 42 | 0.0020 | 39 | 36 | 42 | | 20 | | | 21 | 23 | 33 | 36 | 10 | 0.03 |
| C285 | TEN32 | pipe | Equivalent 36 | 60 | 0.0020 | **101** | 60 | 66 | | 20 | 11 | 19 | 85 | 91 | 132 | 140 | 40 | 0.14 |
| C272 | | LLL | Monterey | | 0.0025 | | | | 15 | | | | 799 | 820 | 1500 | 1500 | 824 | 3.33 |
| LLL300 | | ditch | | | 0.0950 | | 12 | 18 | 2 | 136 | | | 14 | 14 | 28 | 28 | 10 | 0.04 |
| R302 | DAN5 | pipe | Denali Dr. | 12 | 0.0115 | **7** | 18 | 24 | | 47 | | | 1 | 14 | 28 | 28 | 10 | 0.04 |
| LLL302 | | pipe | | 15 | 0.0120 | 6 | 18 | 24 | | 48 | | | 8 | 11 | 15 | 19 | 4 | 0.02 |
| P302 | DAN2 | pond | #26 Denali Dr. | | | | | | | | | | 7 | 7 | 13 | 18 | 4 | 0.02 |
| C300 | DAN1 | pipe | Olympic/Dena | 24 | 0.0161 | **20** | 24 | 30 | | 56 | | | 21 | 21 | 40 | 43 | 14 | 0.05 |
| R305A | OLY9 | pipe | Olympic | 24 | 0.0030 | **22** | 30 | 42 | | 24 | | | 20 | 20 | 40 | 41 | 14 | 0.05 |
| LLL304 | | ditch | | | 0.0630 | | 18 | 24 | 3 | 110 | | | 30 | 30 | 57 | 57 | 18 | 0.08 |
| P304 | SUN61 | pond | #27 Sunset Ave. | | | | | | | | | | 30 | 30 | 54 | 54 | 18 | 0.08 |
| R305B | BRY10 | pipe | Bryce/Sunset | 24 | 0.0090 | **30** | 30 | 36 | | 42 | | | 30 | 30 | 54 | 54 | 18 | 0.08 |
| LLL305 | | pipe | | 24 | 0.0030 | 11 | 30 | 30 | | 24 | | | 12 | 15 | 21 | 25 | 6 | 0.03 |
| C302 | OLY11 | pipe | Olympic/W. E | 36 | 0.0237 | **87** | 24 | 36 | | 68 | | | 39 | 41 | 71 | 71 | 26 | 0.1 |
| C304 | OLY11 | pipe | W. Edmundso | 36 | 0.0360 | **87** | 30 | 36 | | 83 | | | 58 | 59 | 110 | 112 | 40 | 0.15 |
| LLL310 | | pipe | | 12 | 0.0110 | 3 | 18 | 24 | | 46 | | | 10 | 10 | 19 | 19 | 10 | 0.04 |
| C305 | OLY12 | pipe | | 36 | 0.0033 | 33 | 48 | 60 | | 25 | 70 | 71 | 68 | 69 | 129 | 130 | 50 | 0.2 |
| P310 | OLY13 | pond | #28 Community Park | | 0.0040 | | | | | | | | 6 | 6 | 36 | 39 | 28 | 0.2 |
| R310 | WED12 | pipe | Edmundson | 36 | 0.0040 | **34** | 18 | 36 | | 28 | | | 6 | 6 | 36 | 39 | 28 | 0.2 |
| C295 | | LLL | L. Llagas channel | | 0.0025 | | | | 15 | | | | 802 | 823 | 1505 | 1505 | 850 | 3.53 |
| R315 | | LLL | L. Llagas channel | | 0.0025 | | | | 15 | | | | 800 | 820 | 1503 | 1503 | 850 | 3.53 |
| LLL315 | | street | Piazza Way | | 0.0040 | | | | | | | | 12 | 12 | 19 | 19 | 4 | 0.02 |
| P315 | PIA3 | pond | #29 Piazza Way | | | | | | | | | | 10 | 10 | 16 | 16 | 4 | 0.02 |
| C310 | | LLL | La Crosse/L. Llagas c | | 0.0025 | | | | 15 | | | | 806 | 826 | 1511 | 1511 | 854 | 3.54 |
| LLL318 | | ditch | | | 0.0690 | | 18 | 18 | 2 | 116 | | | 15 | 15 | 28 | 28 | 10 | 0.04 |
| R320 | | street | L. Llagas channel | | 0.0060 | | 24 | 30 | | 34 | | | 15 | 15 | 28 | 28 | 10 | 0.04 |
| LLL320 | | ditch | | | 0.0050 | | 36 | 42 | 4 | 31 | | | 29 | 38 | 52 | 64 | 16 | 0.06 |
| C318 | | pipe | La Crosse | 30 | 0.0040 | 23 | 36 | 48 | | 28 | | | 43 | 45 | 80 | 80 | 26 | 0.1 |
| C315 | | LLL | L. Llagas channel | | 0.0025 | | | | 16 | | | | 849 | 864 | 1566 | 1566 | 882 | 3.65 |
| LLL325 | LAC27 | pipe | | 30 | 0.0010 | 11 | 42 | 48 | | 14 | 21 | 21 | 29 | 29 | 46 | 46 | 16 | 0.06 |
| C320 | | LLL | La Crosse/L. Llagas c | | 0.0025 | | | | 16 | | | | 871 | 888 | 1593 | 1596 | 898 | 3.71 |
| LLL330 | | ditch | | | 0.0710 | | 30 | 36 | 4 | 117 | | | 82 | 82 | 155 | 155 | 58 | 0.2 |
| R335 | | WEST I | W. fork L. Llagas ch. | | 0.0025 | | | | 7 | | | | 78 | 78 | 150 | 150 | 58 | 0.2 |
| LLL335 | | ditch | | | 0.0790 | | 24 | 30 | 4 | 124 | | | 65 | 65 | 127 | 127 | 52 | 0.21 |
| C330 | | WEST I | Edmundson/Sunnysid | | 0.0025 | | | | 8 | | | | 141 | 141 | 276 | 276 | 108 | 0.41 |
| LLL340 | | ditch | | | 0.1590 | | 24 | 30 | 3 | 175 | | | 56 | 56 | 113 | 113 | 44 | 0.18 |
| R345 | | ditch | | | 0.0190 | | 30 | 42 | 4 | 61 | | | 56 | 56 | 113 | 113 | 44 | 0.18 |
| LLL345 | | ditch | | | 0.1100 | | 24 | 30 | 3 | 146 | | | 49 | 49 | 98 | 98 | 38 | 0.16 |
| C340 | | WEST I | Edmundson/Loma Alt | | 0.0025 | | | | 8 | | | | 105 | 105 | 210 | 210 | 82 | 0.34 |
| C335 | | WEST I | Edmundson/Loma Alt | | 0.0025 | | | | 10 | | | | 246 | 246 | 486 | 486 | 190 | 0.75 |
| R350 | | WEST I | W. fork L. Llagas ch. | | 0.0025 | | | | 10 | | | | 246 | 246 | 486 | 486 | 190 | 0.75 |
| LLL350 | | ditch | | | 0.1430 | | 18 | 24 | 2 | 166 | | | 26 | 29 | 49 | 52 | 18 | 0.07 |
| C345 | | WEST I | W. fork L. Llagas ch. | | 0.0025 | | | | 11 | | | | 268 | 268 | 528 | 528 | 208 | 0.82 |
| LLL355 | | street | Encino Rio | | 0.0110 | | 24 | 24 | | 46 | | | 13 | 15 | 25 | 28 | 10 | 0.04 |
| R360A | | PIPE | | 15 | 0.0320 | 10 | 18 | 24 | | 79 | | | 13 | 15 | 25 | 28 | 10 | 0.04 |
| C350 | | WEST I | W. fork L. Llagas ch. | | 0.0025 | | | | 11 | | | | 280 | 280 | 552 | 552 | 216 | 0.85 |
| R360B | | WEST I | W. fork L. Llagas ch. | | 0.0025 | | | | 11 | | | | 280 | 280 | 552 | 552 | 216 | 0.85 |
| LLL360 | | ditch | | | 0.0300 | | 18 | 18 | 2 | 76 | | | 6 | 10 | 11 | 16 | 4 | 0.02 |
| C355 | | WEST I | W. fork L. Llagas ch. | | 0.0025 | | | | 11 | | | | 285 | 285 | 562 | 562 | 220 | 0.87 |
| LLL365 | | street | | | 0.0030 | | 18 | 24 | | 24 | | | 6 | 6 | 11 | 11 | 4 | 0.01 |
| C360 | | WEST I | W. fork L. Llagas ch. | | 0.0025 | | | | 11 | | | | 289 | 289 | 570 | 570 | 224 | 0.88 |
| LLL370 | VIA55 | PIPE | | 15 | 0.0570 | 13 | 12 | 12 | | 105 | | | 7 | 7 | 11 | 11 | 2 | 0.01 |
| P370 | VIA55 | pond | #30 Via Castina | | | | | | | | | | 6 | 6 | 8 | 8 | 2 | 0.01 |
| R372 | LAC8 | pipe | La Grange | 24 | 0.0080 | 18 | 18 | 18 | | 39 | | | 6 | 6 | 8 | 8 | 2 | 0.01 |
| LLL372 | | ditch | | | 0.0070 | | 18 | 18 | 2 | 37 | | | 5 | 5 | 8 | 8 | 2 | 0.01 |
| C370 | LAC8 | pipe | La Grange/La | 18 | 0.0133 | 11 | 18 | 18 | | 51 | | | 11 | 11 | 15 | 15 | 6 | 0.02 |
| C365 | | WEST I | La Crosse/W. fork L. | | 0.0025 | | | | 11 | | | | 295 | 295 | 582 | 582 | 230 | 0.9 |
| R380A | | WEST I | W. fork L. Llagas ch. | | 0.0025 | | | | 11 | | | | 295 | 295 | 580 | 580 | 230 | 0.9 |
| LLL375 | LAC20 | pipe | | 30 | 0.0060 | 28 | 30 | 36 | | 34 | | | 15 | 23 | 27 | 38 | 10 | 0.04 |
| R380B | LAC23 | pipe | Descansa | 30 | 0.0060 | 28 | 30 | 36 | | 34 | | | 15 | 23 | 27 | 37 | 10 | 0.04 |
| LLL380 | | street | Descansa / La Escue | | 0.0050 | | 18 | 24 | | 31 | | | 9 | 9 | 15 | 15 | 4 | 0.01 |
| C375 | LAC23 | pipe | La Escuela | 36 | 0.0017 | 24 | 42 | 48 | | 18 | | | 19 | 30 | 36 | 51 | 14 | 0.06 |
| C372 | | WEST I | W. fork L. Llagas ch. | | 0.0025 | | | | 11 | | | | 314 | 314 | 615 | 615 | 244 | 0.96 |
| R325 | | WEST I | W. fork L. Llagas ch. | | 0.0025 | | | | 11 | | | | 310 | 310 | 601 | 601 | 244 | 0.96 |
| R325B | | WEST I | W. fork L. Llagas ch. | | 0.0025 | | | | 11 | | | | 305 | 305 | 587 | 587 | 244 | 0.96 |

# Appendix A1 Little Llagas Creek Capacities and Design Flows
## Storm Drainage Master Plan
## City of Morgan Hill

| HEC1 OPER | PIPE NODE NAME | TYPE | LOCATION | PIPE SIZE (in) | SLOPE | PIPE EXIST CAP (cfs) | PIPE 10-YR FUTURE dia (in) | PIPE 100-YR FUTURE dia (in) | DITCH 100-YR FUTURE width (ft) | STREET CAPACITY 40 ft/.025 (cfs) | 100 YR EXIST EXCESS FLOW >10 (cfs) | 100 YR 2020 EXCESS FLOW >10 (cfs) | 10-YR EXIST HEC1 (cfs) | 10-YR 2020 HEC-1 (cfs) | 100-YR EXIST HEC-1 (cfs) | 100-YR 2020 HEC-1 (cfs) | 100 YR VOL 2020 (ac ft) | AREA (sq. mi.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LLL385 | | street | Via Castana/Ensino | | 0.0030 | | 36 | 42 | | 24 | | | 26 | 27 | 46 | 47 | 14 | 0.06 |
| R395A | LAC23 | street | La Crosse/La Mesa | | 0.0050 | | 30 | 36 | | 31 | | | 26 | 27 | 45 | 46 | 14 | 0.06 |
| LLL390 | | pipe | | 21 | 0.0040 | 9 | 18 | 24 | | 28 | | | 7 | 7 | 12 | 12 | 4 | 0.01 |
| R395B | | ditch | La Almeda | | 0.0020 | | 18 | 24 | 3 | 20 | | | 6 | 6 | 11 | 11 | 4 | 0.01 |
| C385 | | STREE | La Almeda | | 0.0030 | | 36 | 42 | | 24 | | | 30 | 31 | 54 | 55 | 18 | 0.07 |
| LLL395 | LAC2 | pipe | | 18 | 0.0030 | 5 | 36 | 42 | | 24 | 19 | 19 | 28 | 28 | 48 | 48 | 14 | 0.06 |
| C390 | LAC23 | pipe | La Crosse/La | 27 | 0.0050 | 19 | 42 | 48 | | 31 | 47 | 48 | 55 | 57 | 97 | 98 | 32 | 0.13 |
| LL400 | ALA2 | pipe | | 21 | 0.0030 | **6** | 30 | 36 | | 24 | | | 18 | 18 | 29 | 29 | 8 | 0.03 |
| R405 | ENC2 | pipe | Encino | 24 | 0.0020 | **12** | 30 | 36 | | 20 | | | 15 | 18 | 25 | 25 | 8 | 0.03 |
| LLL405 | | pipe | | 27 | 0.0030 | 15 | 24 | 30 | | 24 | | | 10 | 10 | 17 | 17 | 6 | 0.02 |
| C400 | ENC3 | pipe | La Baree | 24 | 0.0013 | **13** | 36 | 42 | | 16 | | | 22 | 22 | 37 | 37 | 14 | 0.05 |
| C395 | LAC3 | pipe | La Crosse/Ca | 27 | 0.0030 | **17** | 48 | 60 | | 24 | 93 | 94 | 77 | 78 | 134 | 135 | 46 | 0.18 |
| R410 | LAC4 | pipe | La Crosse | 27 | 0.0030 | **18** | 48 | 60 | | 24 | 87 | 88 | 75 | 76 | 129 | 130 | 46 | 0.18 |
| LLL410 | | pipe | | 30 | 0.0030 | 20 | 30 | 36 | | 24 | | | 19 | 19 | 32 | 32 | 10 | 0.04 |
| C405 | LAC5 | pipe | La Crosse/La | 27 | 0.0025 | 13 | 54 | 66 | | 22 | 120 | 121 | 89 | 90 | 155 | 156 | 54 | 0.22 |
| LLL415 | | street | La Jolla / La Crosse | | 0.0020 | | 18 | 24 | | 20 | | | 4 | 4 | 7 | 7 | 2 | 0.01 |
| C410 | LAC3 | pipe | La Crosse/L. | 30 | 0.0036 | 21 | 54 | 66 | | 26 | 112 | 113 | 92 | 93 | 160 | 161 | 58 | 0.23 |
| C325 | | WEST | L. Llagas channel | | 0.0025 | | | | 12 | | | | 368 | 368 | 706 | 706 | 300 | 1.19 |
| C380 | | LLL | L. Llagas channel | | 0.0025 | | | | 18 | | | | 1218 | 1224 | 2299 | 2299 | 1198 | 4.89 |
| LLL411 | | pipe | | 48 | 0.0010 | 39 | 30 | 36 | | 14 | | | 12 | 12 | 21 | 21 | 6 | 0.03 |
| R412 | LAM2 | street | La Mar | | 0.0060 | | 24 | 30 | | 34 | | | 12 | 12 | 21 | 21 | 6 | 0.03 |
| LLL412 | | pipe | | 30 | 0.0030 | 20 | 24 | 30 | | 24 | | | 11 | 11 | 18 | 18 | 6 | 0.02 |
| C411 | LAV3 | pipe | La Via Azul | 48 | 0.0033 | **56** | 30 | 36 | | 25 | | | 20 | 20 | 35 | 35 | 12 | 0.05 |
| C415 | | LLL | L. Llagas channel | | 0.0025 | | | | 18 | | | | 1231 | 1238 | 2322 | 2322 | 1208 | 4.94 |
| LLL420 | VIN5 | pipe | | 27 | 0.0020 | **25** | 42 | 48 | | 20 | | 16 | 31 | 39 | 50 | 61 | 14 | 0.06 |
| R430A | | pipe | Vineyard | 36 | 0.0030 | 32 | 36 | 48 | | 24 | | | 30 | 38 | 48 | 59 | 14 | 0.06 |
| LLL425 | CON20 | pipe | | 30 | 0.0010 | **10** | 48 | 60 | | 14 | 36 | 42 | 39 | 43 | 60 | 66 | 18 | 0.06 |
| C420 | CON22 | pipe | Concord/Vine | 42 | 0.0030 | **63** | 48 | 60 | | 24 | 20 | 36 | 68 | 80 | 107 | 123 | 32 | 0.12 |
| P425 | CON28 | pond | #31 Concord Circle Pump Station | | | | | | | | | | 4 | 4 | 11 | 13 | 12 | 0.12 |
| R430B | | pump li | Vineyard | 14.4 | 0.0030 | | | | | | | | 4 | 4 | 11 | 13 | 12 | 0.12 |
| LLL430 | VIN8 | pipe | | 42 | 0.0020 | **26** | 36 | 42 | | 20 | | | 31 | 31 | 46 | 46 | 12 | 0.04 |
| C425 | VIN9 | pipe | Monterey | 42 | 0.0030 | **100** | 36 | 42 | | 24 | | | 33 | 34 | 49 | 49 | 22 | 0.16 |
| R435 | VIN10 | pipe | Vineyard | 60 | 0.0020 | **90** | 36 | 48 | | 20 | | | 32 | 32 | 47 | 47 | 22 | 0.16 |
| LLL435 | | street | Vineyard | | 0.0010 | | 48 | 54 | | 14 | | | 35 | 35 | 53 | 53 | 10 | 0.04 |
| C430 | VIN11 | pipe | Vineyard/La C | 60 | 0.0010 | **127** | 60 | 66 | | 14 | | | 63 | 63 | 94 | 94 | 34 | 0.2 |
| C412 | | LLL | L. Llagas channel | | 0.0025 | | | | 18 | | | | 1255 | 1263 | 2359 | 2359 | 1242 | 5.14 |
| LLL440 | | street | Monterey | | 0.0100 | | 24 | 24 | | 44 | | | 14 | 14 | 22 | 22 | 6 | 0.02 |
| R520 | MON40 | pipe | off Monterey | 24 | 0.0020 | **10** | 30 | 30 | | 20 | | | 13 | 13 | 20 | 20 | 6 | 0.02 |
| C435 | | LLL | L. Llagas channel at | | 0.0025 | | | | 18 | | | | 1261 | 1269 | 2368 | 2368 | 1248 | 5.16 |
| R445 | | BYPAS | Bypass Channel | | 0.0025 | | | | 18 | | | | 1258 | 1267 | 2362 | 2362 | 1248 | 5.16 |
| LLL445 | | pipe | | 21 | 0.0010 | 4 | 24 | 30 | | 14 | | | 3 | 8 | 6 | 13 | 2 | 0.01 |
| C440 | | BYPAS | Bypass Channel | | 0.0025 | | | | 18 | | | | 1261 | 1270 | 2367 | 2367 | 1250 | 5.17 |
| LLL452 | VIA2 | pipe | | 15 | 0.0060 | 4 | 18 | 24 | | 34 | | | 8 | 8 | 13 | 13 | 4 | 0.02 |
| P452 | VIA4 | pond | #32 Hamilton Square Tract 8491 | | | | | | | | | | 5 | 5 | 7 | 7 | 4 | 0.02 |
| R454 | WAT53 | pipe | Watsonville | 36 | 0.0020 | 26 | 18 | 24 | | 20 | | | 5 | 5 | 7 | 7 | 4 | 0.02 |
| LLL454 | | pipe | | 18 | 0.0020 | 4 | 18 | 18 | | 20 | | | 4 | 4 | 6 | 6 | 2 | 0.01 |
| C452 | WAT54 | pipe | Pra Tola | 15 | 0.0116 | 6 | 18 | 18 | | 47 | | | 7 | 7 | 11 | 11 | 6 | 0.02 |
| R455 | WAT54 | pipe | Watsonville | 36 | 0.0050 | 41 | 18 | 24 | | 31 | | | 7 | 7 | 11 | 11 | 6 | 0.02 |
| LLL455 | VIA72 | street | Via Sorrento | | 0.0030 | | 24 | 24 | | 24 | | | 8 | 8 | 13 | 13 | 2 | 0.01 |
| C454 | WAT56 | pipe | Via Sorrento | 18 | 0.0025 | 5 | 30 | 36 | | 22 | | | 14 | 14 | 23 | 23 | 10 | 0.03 |
| R465 | WAT56 | pipe | Watsonville | 24 | 0.0040 | 12 | 24 | 30 | | 28 | | | 13 | 13 | 21 | 21 | 10 | 0.03 |
| LLL465 | | pipe | | 27 | 0.0010 | 9 | 36 | 42 | | 14 | | | 19 | 19 | 28 | 28 | 4 | 0.01 |
| C455 | WAT57 | pipe | Watsonville/L | 36 | 0.0027 | 30 | 36 | 42 | | 23 | | | 29 | 29 | 44 | 44 | 14 | 0.05 |
| C445 | | BYPAS | Bypass Channel | | 0.0025 | | | | 18 | | | | 1274 | 1284 | 2388 | 2388 | 1264 | 5.22 |
| LLL470 | LAA2 | pipe | | 21 | 0.0010 | 4 | 24 | 30 | | 14 | | | 8 | 8 | 13 | 13 | 4 | 0.02 |
| P470 | LAA3 | pond | #33 Mill Creek Tract 8537 | | | | | | | | | | 4 | 4 | 6 | 6 | 4 | 0.02 |
| R472 | LAJ14 | pipe | Via Largo | 24 | 0.0040 | 12 | 18 | 18 | | 28 | | | 4 | 4 | 6 | 6 | 4 | 0.02 |
| LLL472 | LAJ11 | pipe | | 81 | 0.0020 | 225 | 24 | 30 | | 20 | | | 9 | 9 | 15 | 15 | 6 | 0.02 |
| C470 | WAT57 | pipe | La Jolla/L. Lla | 27 | 0.0030 | 15 | 24 | 30 | | 24 | | | 13 | 13 | 20 | 20 | 10 | 0.04 |
| C465 | | BYPAS | Bypass Channel | | 0.0025 | 0 | | | 18 | | | | 1285 | 1294 | 2404 | 2404 | 1274 | 5.25 |
| R485 | | BYPAS | Bypass Channel | | 0.0025 | 0 | | | 18 | | | | 1284 | 1294 | 2402 | 2402 | 1274 | 5.25 |
| LLL485 | | ditch | | | 0.0010 | | 48 | 60 | 6 | 14 | | | 20 | 40 | 40 | 68 | 24 | 0.12 |
| C472 | | BYPAS | Bypass Channel | | 0.0025 | 0 | | | 18 | | | | 1300 | 1311 | 2438 | 2438 | 1298 | 5.37 |
| LLL490 | | ditch | | | 0.0030 | | 24 | 30 | 3 | 24 | | | 5 | 10 | 9 | 16 | 6 | 0.02 |
| C485 | | BYPAS | Bypass Channel | | 0.0025 | 0 | | | 18 | | | | 1305 | 1316 | 2447 | 2447 | 1304 | 5.39 |
| R495 | | BYPAS | Bypass Channel | | 0.0025 | 0 | | | 18 | | | | 1303 | 1315 | 2444 | 2444 | 1304 | 5.39 |
| LLL495 | | ditch | | | 0.0030 | | 30 | 42 | 4 | 24 | | | 22 | 25 | 41 | 48 | 28 | 0.12 |
| C490 | | BYPAS | Bypass Channel | | 0.0025 | 0 | | | 18 | | | | 1323 | 1332 | 2482 | 2482 | 1332 | 5.5 |
| LLL500 | | ditch | | | 0.0020 | | 24 | 30 | 3 | 20 | | | 7 | 8 | 13 | 15 | 8 | 0.03 |
| C495 | | BYPAS | Bypass Channel | | 0.0025 | 0 | | | 18 | | | | 1329 | 1338 | 2480 | 2482 | 1338 | 5.54 |
| LLL520 | | ditch | | | 0.0010 | | 42 | 48 | 5 | 14 | | | 15 | 24 | 25 | 37 | 12 | 0.05 |
| LLL525 | | street | Watsonville | | 0.0020 | | 30 | 36 | | 20 | | | 13 | 14 | 21 | 22 | 8 | 0.03 |
| C520 | | OLD LL | L. Llagas channel | | 0.0025 | 0 | | | 5 | | | | 27 | 37 | 46 | 59 | 20 | 0.08 |
| LLL528 | | ditch | | | 0.0030 | | 36 | 42 | 5 | 24 | | | 12 | 35 | 25 | 57 | 14 | 0.06 |
| C525 | | OLD LL | L. Llagas channel | | 0.0025 | 0 | | | 6 | | | | 39 | 73 | 70 | 115 | 34 | 0.13 |
| R530 | | OLD LL | L. Llagas channel | | 0.0025 | 0 | | | 5 | | | | 32 | 46 | 59 | 74 | 34 | 0.13 |
| LLL530 | | ditch | | | 0.0040 | | 30 | 42 | 4 | 28 | | | 24 | 24 | 50 | 50 | 34 | 0.18 |
| C528 | | OLD LL | L. Llagas channel | | 0.0025 | 0 | | | 6 | | | | 55 | 68 | 109 | 124 | 68 | 0.31 |

# Appendix A1 Little Llagas Creek Capacities and Design Flows
## Storm Drainage Master Plan
## City of Morgan Hill

| HEC1 OPER | PIPE NODE NAME | TYPE | LOCATION | PIPE SIZE (in) | SLOPE | PIPE EXIST CAP (cfs) | PIPE 10-YR FUTURE dia (in) | PIPE 100-YR FUTURE dia (in) | DITCH 100-YR FUTURE width (ft) | STREET CAPACITY 40 ft/.025 (cfs) | 100 YR EXIST EXCESS FLOW >10 (cfs) | 100 YR 2020 EXCES S FLOW >10 (cfs) | 10-YR EXIST HEC1 (cfs) | 10-YR 2020 HEC-1 (cfs) | 100-YR EXIST HEC-1 (cfs) | 100-YR 2020 HEC-1 (cfs) | 100 YR VOL 2020 (ac ft) | AREA (sq. mi.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LLL535 | | ditch | | | 0.0040 | | 42 | 48 | 5 | 28 | | | 17 | 48 | 32 | 77 | 20 | 0.08 |
| C530 | | OLD LL | L. Llagas channel | | 0.0025 | 0 | | | 7 | | | | 73 | 91 | 141 | 159 | 88 | 0.39 |
| LLL540 | | ditch | | | 0.0040 | | 30 | 42 | 4 | 28 | | | 25 | 25 | 52 | 52 | 38 | 0.18 |
| C535 | | OLD LL | US 101/L. Llagas ch. | | 0.0025 | 0 | | | 8 | | | | 97 | 113 | 191 | 209 | 124 | 0.57 |

# Appendix A2 Fisher Creek Capacities and Design Flows
## Storm Drainage Master Plan
## City of Morgan Hill

| HEC1 OPER | PIPE NODE NAME | TYPE | LOCATION | PIPE SIZE (in) | SLOPE | PIPE EXIST CAP (cfs) | PIPE 10-YR FUTURE dia (in) | PIPE 100-YR FUTURE dia (in) | DITCH 100-YR FUTURE width (ft) | STREET CAPACITY 40 ft/.025 (cfs) | 100 YR EXIST EXCESS FLOW >10 (cfs) | 100 YR 2020 EXCESS FLOW >10 (cfs) | 10-YR EXISTING HEC1 (cfs) | 10-YR 2020 HEC-1 (cfs) | 100-YR EXISTING HEC-1 (cfs) | 100-YR 2020 HEC-1 (cfs) | 100 YR VOL 2020 (ac ft) | AREA (sq. mi) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FIS2 | JAN5 | pipe | | 36 | 0.004 | 37 | 54 | 66 | | 28 | 97 | 112 | 100 | 112 | 161 | 176 | 46 | 0.18 |
| R4 | BUT12 | pipe | Butterfield Blvd. | 48 | 0.004 | ***116*** | 54 | 60 | | 28 | | | 88 | 97 | 137 | 149 | 46 | 0.18 |
| FIS4 | BUT17 | pipe | | 36 | 0.004 | ***319*** | 54 | 66 | | 28 | | | 82 | 122 | 136 | 193 | 56 | 0.22 |
| C2 | BUT18 | pipe | n/a | 84 | 0.0041 | ***266*** | 72 | 84 | | 28 | | | 165 | 212 | 268 | 335 | 102 | 0.39 |
| FIS5 | MON14 | pipe | | 48 | 0.004 | 79 | 30 | 36 | | 28 | | | 21 | 26 | 33 | 41 | 10 | 0.04 |
| C4 | | pipe | Monterey | 48 | 0.003 | 68 | 78 | 90 | | 24 | | | 186 | 238 | 301 | 375 | 112 | 0.43 |
| FIS6 | | street | | 12 | 0.005 | | 30 | 36 | | 31 | | | 28 | 28 | 43 | 43 | 6 | 0.02 |
| C5 | | street | | 12 | 0.003 | | 78 | 96 | | 24 | | | 200 | 253 | 324 | 399 | 118 | 0.46 |
| P6 | BUT24 | pond | #13 Morgan Hill Business Park No. 1 | | | | | | | | | | 54 | 56 | 67 | 69 | 112 | 0.46 |
| P6 | BUT25 | pond | #14 Morgan Hill Business Park No. 2 | | | | | | | | | | | | | | | |
| P6 | BUT22 | pond | #15 Morgan Hill Business Park No. 3 | | | | | | | | | | | | | | | |
| P6 | BUT26 | pond | #16 Morgan Hill Business Park Pump Station | | | | | | | | | | | | | | | |
| R8 | | ditch | Berkshire chase pond | | 0.005 | | 42 | 42 | 5 | 31 | | | 54 | 56 | 67 | 69 | 112 | 0.46 |
| FIS8 | | ditch | | | 0.002 | | 30 | 36 | 4 | 20 | | | 9 | 13 | 1 | 21 | 4 | 0.02 |
| C6 | | pond | Old Monterey | | 0.003 | | | | | | | | 56 | 61 | 69 | 76 | 116 | 0.47 |
| FIS10 | COC15 | pipe | | 36 | 0.002 | ***37*** | 42 | 54 | | 20 | | | 43 | 43 | 67 | 67 | 16 | 0.06 |
| P10 | COC16 | pond | #17 Sutter Business Park Private | | | | | | | | | | 5 | 5 | 11 | 11 | 12 | 0.06 |
| R105 | COC17 | pipe | n/a | 48 | 0.004 | ***34*** | 18 | 24 | | 28 | | | 5 | 5 | 11 | 11 | 12 | 0.06 |
| FIS12 | WOO2 | pipe | | 36 | 0.003 | ***60*** | 42 | 48 | | 24 | | | 48 | 48 | 74 | 74 | 14 | 0.05 |
| P12 | WOO3 | pond | #18 Cochrane Business Park Private | | | | | | | | | | 24 | 24 | 32 | 32 | 14 | 0.05 |
| FIS15 | | ditch | | | 0.005 | | 36 | 42 | 5 | 31 | | | 6 | 48 | 14 | 74 | 14 | 0.05 |
| R45A | WOO4 | pipe | n/a | 36 | 0.004 | ***63*** | 36 | 48 | | 28 | | | 6 | 45 | 14 | 69 | 14 | 0.05 |
| C12 | WOO7 | pipe | n/a | 42 | 0.0121 | ***90*** | 36 | 42 | | 48 | | | 28 | 68 | 43 | 98 | 28 | 0.10 |
| FIS25 | | street | | 12 | 0.005 | | 24 | 24 | | 31 | | | 7 | 11 | 12 | 17 | 4 | 0.02 |
| C15 | WOO7 | pipe | n/a | 42 | 0.003 | ***90*** | 48 | 60 | | 24 | | | 32 | 78 | 49 | 113 | 32 | 0.12 |
| FIS30 | | street | | 12 | 0.005 | | 24 | 30 | | 31 | | | 4 | 12 | 8 | 19 | 4 | 0.02 |
| C25 | WOO7 | pipe | | 48 | 0.003 | ***90*** | 54 | 60 | | 24 | | | 36 | 87 | 57 | 128 | 36 | 0.13 |
| R45B | CLA1 | future pipe | n/a | 48 | | ***125*** | | | | | | | 36 | 84 | 57 | 123 | 36 | 0.13 |
| FIS45 | | ditch | | | 0.006 | | 48 | 60 | 6 | 34 | | | 54 | 99 | 97 | 166 | 52 | 0.20 |
| C30 | PEE8 | pipe begins | n/a | 60 | 0.0175 | | 48 | 60 | | 58 | | | 87 | 170 | 153 | 272 | 88 | 0.33 |
| R50 | PEE11 | pipe | n/a | 60 | 0.004 | ***108*** | 66 | 78 | | 28 | 17 | 125 | 87 | 166 | 153 | 261 | 88 | 0.33 |
| FIS50 | TAY1 | pipe | | 21 | 0.005 | ***12*** | 42 | 54 | | 31 | 43 | 73 | 50 | 72 | 86 | 116 | 32 | 0.13 |
| C45 | PEE11 | future pipe | Monterey | 60 | | ***108*** | | | | | | | 120 | 228 | 205 | 364 | 120 | 0.46 |
| R60 | PEE12 | future pipe | Monterey | 60 | | | | | | | | | 117 | 211 | 203 | 330 | 120 | 0.46 |
| C50 | PEE12 | future pipe | Monterey/Burnett | 60 | 0.0009 | | 90 | 108 | | 13 | | | 121 | 215 | 209 | 336 | 130 | 0.52 |
| FIS55 | | ditch | | | 0.004 | | 42 | 48 | 5 | 28 | | | 51 | 51 | 89 | 89 | 50 | 0.19 |
| FIS60 | | street | | 12 | 0.003 | | 36 | 42 | | 24 | | | 34 | 34 | 57 | 57 | 26 | 0.09 |
| C55 | | future pipe | Burnett | | 0.003 | | 54 | 66 | | 24 | | | 85 | 85 | 146 | 146 | 74 | 0.28 |
| R70 | | future pipe | Burnett | 60 | 0.005 | | 48 | 60 | | 31 | | | 85 | 85 | 145 | 145 | 74 | 0.28 |
| FIS70 | | street | | 12 | 0.001 | | 30 | 36 | | 14 | | | 11 | 11 | 20 | 20 | 8 | 0.03 |
| C60 | NA | future pipe | Monterey/Burnett | 60" | 0.004 | | 54 | 66 | | 28 | | | 95 | 95 | 165 | 165 | 82 | 0.32 |
| FIS72 | | street | | 12 | 0.002 | | 42 | 48 | | 20 | | | 38 | 38 | 60 | 60 | 14 | 0.05 |
| C70 | | ditch | Monterey/Burnett | | 0.004 | | 60 | 72 | 7 | 28 | | | 127 | 127 | 215 | 215 | 96 | 0.37 |
| R75 | | ditch | Monterey | | 0.0035 | | 60 | 72 | 7 | 26 | | | 126 | 126 | 214 | 214 | 96 | 0.37 |
| FIS75 | | ditch | | | 0.005 | | 30 | 36 | 4 | 31 | | | 12 | 26 | 23 | 43 | 12 | 0.04 |
| C72 | NA | ditch | Monterey | | 0.004 | | 60 | 72 | 7 | 28 | | | 139 | 141 | 237 | 239 | 106 | 0.41 |
| R120A | | future pipe | Tilton | 96 | 0.003 | | 66 | 78 | | 24 | | | 139 | 141 | 236 | 238 | 106 | 0.41 |
| FIS80 | | ditch | | | 0.143 | | 12 | 12 | 2 | 166 | | | 6 | 10 | 12 | 16 | 4 | 0.02 |
| R84 | | ditch | Carriage | | 0.004 | | 24 | 24 | 3 | 28 | | | 6 | 9 | 12 | 15 | 4 | 0.02 |
| FIS84 | LLA10 | pipe | | 24 | 0.007 | 16 | 24 | 30 | | 37 | | | 19 | 19 | 32 | 32 | 8 | 0.04 |
| C80 | MUR1 | pipe | Llagas Rd. | 27 | 0.0054 | 20 | 30 | 36 | | 32 | | | 23 | 27 | 42 | 46 | 14 | 0.05 |
| R88 | LLA15 | pipe | Llagas Rd. | 24 | 0.004 | 12 | 30 | 36 | | 28 | | | 21 | 24 | 37 | 40 | 14 | 0.05 |
| FIS88 | LLA15 | pipe | | 27 | 0.001 | 9 | 42 | 48 | | 14 | -16 | 24 | 28 | 29 | 6 | 46 | 18 | 0.06 |
| C84 | LLA16 | pipe | Llagas/Old Monterey | 30 | 0.027 | 59 | 30 | 36 | | 72 | | | 49 | 52 | 82 | 86 | 32 | 0.12 |
| R89 | LLA17 | pipe | Old Monterey | 36 | 0.004 | 37 | 42 | 48 | | 28 | 13 | 15 | 45 | 47 | 77 | 79 | 32 | 0.12 |
| FIS89 | | ditch | | | 0.001 | | 18 | 24 | 3 | 14 | | | 2 | 3 | 3 | 5 | 2 | 0.00 |
| C88 | | ditch | Old Monterey | | 0.0461 | | 24 | 30 | 3 | 94 | | | 47 | 50 | 80 | 83 | 32 | 0.12 |
| P89 | OLD3 | pond | #19 Berkshire Chase City | | | | | | | | | | 30 | 30 | 72 | 73 | 32 | 0.12 |
| FIS90 | | ditch | | | 0.076 | | 12 | 18 | 2 | 121 | | | 11 | 12 | 22 | 23 | 10 | 0.04 |
| R92 | VIA10 | pipe | Via Loma | 48 | 0.004 | ***47*** | 24 | 30 | | 28 | | | 11 | 12 | 22 | 22 | 10 | 0.04 |
| FIS92 | NA | pipe | | 48 | 0.006 | 97 | 24 | 30 | | 34 | | | 16 | 17 | 28 | 29 | 8 | 0.04 |
| C90 | HAL1 | pipe | Hale/Murphy Ct. | 48 | 0.0048 | ***25*** | 30 | 36 | | 30 | | | 25 | 26 | 46 | 47 | 18 | 0.08 |
| FIS94 | HAL2 | pipe | | 36 | 0.006 | ***1*** | 18 | 24 | | 34 | | | 10 | 10 | 17 | 17 | 4 | 0.02 |
| P94 | HAL2 | pond | #20 Fox Hollow Tract 8108 City | | | | | | | | | | 4 | 4 | 6 | 6 | 4 | 0.02 |
| C92 | HAL1 | pipe | Fox Hollow | 36 | 0.0303 | ***25*** | 24 | 30 | | 77 | | | 28 | 29 | 51 | 52 | 22 | 0.10 |
| R95 | OLD3 | pipe | Berkshire | 48 | 0.004 | 79 | 30 | 36 | | 28 | | | 2 | 25 | 45 | 45 | 22 | 0.10 |
| FIS95 | NA | pipe | | 36 | 0.001 | 18 | 36 | 48 | | 14 | | | 20 | 20 | 3 | 34 | 12 | 0.05 |
| C94 | | FIS | | | 0.0028 | | | | | | | | 43 | 45 | 77 | 78 | 36 | 0.15 |
| C89 | | FIS | | | 0.0028 | | | | | | | | 67 | 68 | 145 | 146 | 68 | 0.27 |
| C8 | | FIS | Begin Fisher Channel/ From Pum | | 0.0028 | | | | | | | | 205 | 209 | 369 | 375 | 174 | 0.68 |
| R100 | | FIS | | | 0.0028 | | | | | | | | 199 | 204 | 359 | 365 | 174 | 0.68 |
| FIS100 | | street | | 1 | 0.005 | | 24 | 30 | | 31 | | | 11 | 12 | 19 | 20 | 6 | 0.03 |
| C95 | | FIS | Hale | | 0.0028 | | | | | | | | 207 | 211 | 373 | 379 | 180 | 0.71 |
| FIS105 | | street | | 1 | 0.005 | | 24 | 30 | | 31 | | | 11 | 11 | 19 | 19 | 6 | 0.02 |
| C10 | | FIS | From Cochrane Circle | | 0.0028 | | | | | | | | 212 | 216 | 383 | 389 | 186 | 0.73 |
| C100 | | FIS | Fisher creek | | 0.0028 | | | | | | | | 332 | 410 | 591 | 681 | 316 | 1.25 |
| R115 | | FIS | Hale | | 0.0028 | | | | | | | | 327 | 398 | 584 | 670 | 316 | 1.25 |
| FIS110 | | ditch | | | 0.006 | | 36 | 48 | 5 | 34 | | | 31 | 52 | 62 | 94 | 28 | 0.16 |
| C105 | | FIS | | | 0.0028 | | | | | | | | 357 | 431 | 646 | 734 | 344 | 1.40 |
| FIS115 | | ditch | | | 0.127 | | 24 | 30 | 3 | 157 | | | 70 | 72 | 133 | 136 | 54 | 0.21 |
| C110 | | FIS | | | 0.0028 | | | | | | | | 423 | 499 | 760 | 858 | 398 | 1.62 |
| C75 | | FIS | Tilton Ave. | | 0.0028 | | | | | | | | 478 | 556 | 827 | 927 | 510 | 2.09 |
| R120B | | FIS | | | 0.0028 | | | | | | | | 476 | 553 | 824 | 923 | 510 | 2.09 |
| FIS120 | | ditch | | | 0.003 | | 36 | 42 | 4 | 24 | | | 26 | 26 | 46 | 46 | 20 | 0.08 |
| C115 | | FIS | Fisher creek | | 0.0028 | | | | | | | | 497 | 574 | 863 | 963 | 530 | 2.17 |
| FIS125 | | ditch | | | 0.003 | | 36 | 48 | 5 | 24 | | | 37 | 37 | 69 | 69 | 26 | 0.10 |
| C120 | | FIS | Fisher creek at City Boundary | | 0.0028 | | | | | | | | 532 | 611 | 924 | 1028 | 556 | 2.27 |

# Appendix A3 Llagas Creek Capacities and Design Flows
## Storm Drainage Master Plan
## City of Morgan Hill

| HEC1 OPER | PIPE NODE NAME | TYPE | LOCATION | PIPE SIZE (in) | SLOPE | PIPE EXIST CAP (cfs) | PIPE 10-YR FUTURE dia (in) | PIPE 100-YR FUTURE dia (in) | DITCH 100-YR FUTURE width (ft) | STREET CAPACITY 40 ft/.025 (cfs) | 100 YR EXIST EXCESS FLOW >10 (cfs) | 100 YR 2020 EXCESS FLOW >10 (cfs) | 10-YR EXISTING HEC1 (cfs) | 10-YR 2020 HEC-1 (cfs) | 100-YR EXISTING HEC-1 (cfs) | 100-YR 2020 HEC-1 (cfs) | 100 YR VOL 2020 (ac ft) | AREA (sq. mi) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LLA1 | | natural creek | | | 0.07 | | 24 | 24 | | 116 | | | 36 | 37 | 70 | 71 | 24 | 0.09 |
| R5 | | ditch | Glen Ayre | | 0.03 | | 24 | 30 | 3 | 76 | | | 36 | 37 | 70 | 71 | 24 | 0.09 |
| LLA5 | | natural creek | | | 0.12 | | | | | | | | 51 | 52 | 98 | 100 | 34 | 0.13 |
| C1 | | ditch | Llagas/Deer Run | | 0.03 | | 36 | 42 | 5 | 76 | | | 84 | 85 | 163 | 164 | 58 | 0.23 |
| LLA10 | | natural creek | | | 0.012 | | | | | | | | 43 | 43 | 84 | 84 | 26 | 0.11 |
| C5 | | street | Llagas Rd. | | 0.02 | | 42 | 54 | | 62 | | | 127 | 128 | 247 | 248 | 86 | 0.33 |
| LLA15 | | natural creek | | | 0.05 | | | | | | | | 31 | 31 | 62 | 62 | 20 | 0.09 |
| C10 | | street | Llagas Rd. | | 0.02 | | 48 | 60 | | 62 | | | 158 | 159 | 308 | 309 | 106 | 0.42 |
| LLA20 | | natural creek | | | 0.012 | | | | | | | | 82 | 82 | 160 | 160 | 50 | 0.18 |
| C15 | | street | Llagas Rd. | | 0.02 | | 54 | 72 | | 62 | | | 240 | 241 | 465 | 466 | 154 | 0.6 |
| R25 | | ditch | Llagas Rd. | | 0.02 | | 54 | 72 | 7 | 62 | | | 239 | 240 | 464 | 465 | 154 | 0.6 |
| LLA25 | | natural creek | | | 0.15 | | | | | | | | 69 | 69 | 134 | 134 | 46 | 0.17 |
| C20 | | street | Llagas/Dahlberg | | 0.02 | | 60 | 78 | | 62 | | | 307 | 308 | 593 | 594 | 202 | 0.77 |
| R30 | | ditch | n/a | | 0.029 | | 54 | 72 | 7 | 75 | | | 307 | 307 | 592 | 593 | 202 | 0.77 |
| LLA30 | | ditch | | | 0.11 | | 24 | 36 | 4 | 146 | | | 88 | 88 | 173 | 173 | 56 | 0.21 |
| C25 | | stream | natural stream | | 0.03 | | | | | | | | 392 | 393 | 756 | 757 | 258 | 0.98 |
| LLA100 | app2 | pipe | | 27 | 0.015 | 13 | 24 | 36 | | 54 | | | 29 | 31 | 55 | 57 | 16 | 0.06 |
| P100 | sto3 | pond | #21 Stone Gate | | | | | | | | | | 15 | 15 | 27 | 27 | 16 | 0.06 |
| LLA105 | | ditch | | | 0.12 | | 18 | 24 | 3 | 152 | | | 44 | 44 | 87 | 87 | 26 | 0.1 |
| C100 | sun5 | pipe | Sunnyside/Sycamo | 30 | 0.0053 | 34 | 42 | 48 | | 32 | 38 | 38 | 56 | 56 | 104 | 104 | 42 | 0.16 |
| R110 | | ditch | Sunnyside | | 0.008 | | 36 | 48 | 5 | 39 | | | 56 | 56 | 103 | 103 | 42 | 0.16 |
| LLA110 | | ditch | | | 0.025 | | 24 | 30 | 3 | 70 | | | 32 | 32 | 63 | 63 | 24 | 0.1 |
| C105 | | street | Sunnyside/Watsonville | | 0.005 | | 48 | 60 | | 31 | | | 87 | 87 | 162 | 162 | 66 | 0.26 |
| R112 | sun9 | pipe | Santa Teresa | 72 | 0.001 | 71 | 66 | 78 | | 14 | 69 | 69 | 85 | 85 | 154 | 154 | 66 | 0.26 |
| LLA112 | | street | | | 0.033 | | 30 | 36 | | 80 | | | 50 | 50 | 98 | 98 | 40 | 0.15 |
| C110 | san31 | pipe | Watsonville/Llagas | 66 | 0.004 | | 42 | 54 | 5 | 28 | | | 50 | 50 | 97 | 97 | 40 | 0.15 |
| LLA120 | wat50 | street | | | 0.002 | | 24 | 30 | | 20 | | | 6 | 10 | 13 | 17 | 6 | 0.02 |
| R115 | exc2 | pipe | Excaliber | 60 | 0.004 | 143 | 24 | 30 | | 28 | | | 6 | 10 | 13 | 17 | 6 | 0.02 |
| LLA114 | | street | | | 0.003 | | 24 | 30 | | 24 | | | 9 | 9 | 16 | 16 | 4 | 0.02 |
| P114 | ski1 | pond | #22 Oak Creek | | | | | | | | | | 5 | 5 | 7 | 7 | 4 | 0.02 |
| C120 | whi2 | pipe | | 42 | 0.003 | 48 | 24 | 30 | | 24 | | | 11 | 14 | 20 | 23 | 10 | 0.04 |
| LLA115 | exc2 | pipe | | 60 | 0.003 | 124 | 30 | 36 | | 24 | | | 20 | 20 | 34 | 34 | 12 | 0.04 |
| C114 | exc4 | pipe | | 60 | 0.003 | | | | | | | | 25 | 25 | 41 | 41 | 16 | 0.06 |
| P115 | exc2 | pond | #23 Buena Vista Terrace at Llagas Creek | | | | | | | | | | 24 | 24 | 40 | 40 | 12 | 0.04 |
| LLA132 | ven7 | street | | | 0.005 | | 12 | 12 | | 31 | | | 2 | 2 | 3 | 3 | 2 | 0.04 |
| R135 | ven7 | pipe | n/a | 36 | 0.004 | 16 | 36 | 42 | | 28 | 7 | 13 | 29 | 34 | 51 | 57 | 22 | 0.08 |
| LLA135 | nat10 | pipe | | 48 | 0.005 | 88 | 30 | 36 | | 31 | | | 27 | 27 | 46 | 46 | 10 | 0.05 |
| C132 | nat10 | pipe | Native Dancer | 48 | 0.003 | 68 | 42 | 54 | | 24 | | | 48 | 50 | 79 | 85 | 32 | 0.13 |
| R140 | wal51 | pipe | Walnut | 48 | 0.002 | 56 | 48 | 54 | | 20 | | | 46 | 49 | 77 | 83 | 32 | 0.13 |
| LLA140 | wal53 | pipe | | 24 | 0.002 | 9 | 36 | 42 | | 20 | | | 23 | 23 | 38 | 38 | 16 | 0.06 |
| C135 | wal53 | creek | Llagas creek | | 0.01 | | | | | | | | 68 | 72 | 115 | 120 | 48 | 0.19 |
| LLA145 | eas3 | ditch | | | 0.008 | | 24 | 30 | 4 | 39 | | | 20 | 20 | 40 | 40 | 14 | 0.06 |
| R150 | sha1 | pipe | Shadow/Easy | 36 | 0.01 | 58 | 24 | 30 | | 44 | | | 20 | 20 | 40 | 40 | 14 | 0.06 |
| LLA150 | | street | | | 0.008 | | 30 | 42 | | 39 | | | 39 | 39 | 67 | 67 | 20 | 0.08 |
| C145 | bas1 | pipe | Shadow/Easy/Llaga | 36 | 0.0013 | 21 | 54 | 66 | | 16 | 65 | 65 | 56 | 56 | 102 | 102 | 34 | 0.14 |
| LLA155 | gal11 | pipe | Llagas creek | 24 | 0.004 | 12 | 30 | 42 | | 28 | | | 26 | 26 | 48 | 48 | 18 | 0.08 |
| LLA160 | | street | Llagas creek | | 0.002 | | 30 | 36 | | 20 | | | 14 | 14 | 27 | 27 | 14 | 0.06 |
| LLA165 | sil1 | pipe | | 15 | 0.004 | | 18 | 18 | | 28 | | | 5 | 5 | 8 | 8 | 4 | 0.01 |
| C160 | | creek | Llagas creek | | 0.003 | | | | | | | | 96 | 96 | 178 | 178 | 70 | 0.29 |
| LLA170 | ath1 | pipe | Llagas creek | 18 | 0.103 | | 12 | 18 | | 141 | | | 13 | 13 | 24 | 24 | 6 | 0.03 |
| LLA175 | | ditch | Llagas creek | | 0.002 | | 30 | 36 | 4 | 20 | | | 16 | 16 | 30 | 30 | 16 | 0.07 |
| LLA200 | | ditch | Llagas creek | | 0.003 | | 42 | 54 | 5 | 24 | | | 48 | 48 | 90 | 90 | 48 | 0.23 |
| LLA210 | | ditch | Llagas creek | | 0.001 | | 36 | 48 | | 14 | | | 21 | 21 | 39 | 39 | 20 | 0.09 |
| LLA215 | | street | | | 0.1 | | 12 | 18 | | 139 | | | 8 | 8 | 17 | 26 | 6 | 0.04 |

# Appendix A4 Tennant Creek Capacities and Design Flows
## Storm Drainage Master Plan
## City of Morgan Hill

| HEC1 OPER | PIPE NODE NAME | TYPE | LOCATION | PIPE SIZE (in) | SLOPE | PIPE EXIST CAP (cfs) | PIPE 10-YR FUTURE dia (in) | PIPE 100-YR FUTURE dia (in) | DITCH 100-YR FUTURE width (ft) | STREET CAPACITY 40 ft/.025 (cfs) | 100 YR EXIST EXCESS FLOW >10 (cfs) | 100 YR 2020 EXCESS FLOW >10 (cfs) | 10-YR EXISTING HEC1 (cfs) | 10-YR 2020 HEC-1 (cfs) | 100-YR EXISTING HEC-1 (cfs) | 100-YR 2020 HEC-1 (cfs) | 100 YR VOL 2020 (ac ft) | AREA (sq. mi) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TEN5 | | ditch | Begin Tennant Channel | | 0.037 | 435 | 30 | 36 | 4 | 85 | | | 52 | 52 | 101 | 101 | 44 | 0.20 |
| R10 | | TEN | Hill Rd. | | 0.005 | | | | | | | | 52 | 52 | 101 | 101 | 44 | 0.20 |
| TEN10 | | ditch | | | 0.047 | | 24 | 30 | 4 | 95 | | | 48 | 48 | 95 | 95 | 42 | 0.20 |
| C5 | | TEN | Hill/Hendry | | 0.005 | | | | | | | | 100 | 100 | 195 | 195 | 86 | 0.41 |
| R15 | | TEN | Hill Rd. | | 0.005 | | | | | | | | 100 | 100 | 195 | 195 | 86 | 0.41 |
| TEN15 | | ditch | | | 0.055 | | 18 | 24 | 3 | 103 | | | 24 | 24 | 55 | 55 | 28 | 0.18 |
| C10 | | TEN | Hill/Shafer | | 0.005 | | | | | | | | 124 | 124 | 249 | 249 | 114 | 0.59 |
| R20 | | TEN | Hill Rd. | | 0.004 | | | | | | | | 124 | 124 | 249 | 249 | 114 | 0.59 |
| TEN20 | | ditch | | | 0.029 | | 18 | 24 | 3 | 75 | | | 11 | 11 | 25 | 25 | 12 | 0.07 |
| C15 | | TEN | Hill/Rosetta | | 0.005 | | | | | | | | 135 | 135 | 274 | 274 | 126 | 0.66 |
| R25 | | TEN | Hill Rd. | | 0.003 | | | | | | | | 135 | 135 | 274 | 274 | 126 | 0.66 |
| TEN25 | | ditch | | | 0.046 | | 24 | 30 | 3 | 94 | | | 39 | 39 | 87 | 87 | 38 | 0.23 |
| C20 | | TEN | Hill/E. Dunne | | 0.003 | | | | | | | | 174 | 174 | 360 | 360 | 164 | 0.89 |
| TEN30 | | ditch | | | 0.014 | | 12 | 12 | 2 | 52 | | | 3 | 3 | 6 | 6 | 2 | 0.02 |
| TEN35 | | street | | | 0.014 | | 18 | 18 | | 52 | | | 8 | 8 | 14 | 14 | 4 | 0.01 |
| C30 | EDU20 | pipe | E. Dunne | 36 | 0.003 | 32 | 24 | 30 | | 24 | | | 11 | 11 | 20 | 20 | 6 | 0.03 |
| P35 | EDU20 | pond | #42 East Dunne Ave No. 1 | | | | | | | | | | 4 | 4 | 6 | 6 | 6 | 0.03 |
| R36 | EDU23 | pipe | E. Dunne | 36 | 0.035 | 108 | 12 | 12 | | 82 | | | 4 | 4 | 6 | 6 | 6 | 0.03 |
| TEN36 | | pipe | | 36 | 0.011 | 61 | 12 | 18 | | 46 | | | 4 | 4 | 7 | 7 | 2 | 0.01 |
| C35 | EDU24 | pipe | E. Dunne/Bregaln | 36 | 0.035 | 108 | 12 | 18 | | 82 | | | 7 | 7 | 11 | 11 | 8 | 0.04 |
| C25 | | TEN | Tennant Creek | | 0.003 | | | | | | | | 180 | 180 | 368 | 368 | 172 | 0.93 |
| R40 | | TEN | Tennant Creek | | 0.005 | | | | | | | | 180 | 180 | 368 | 368 | 172 | 0.93 |
| TEN40 | DAR1 | pipe | | 24 | 0.003 | 11 | 30 | 30 | | 24 | | | 16 | 16 | 25 | 25 | 6 | 0.03 |
| C36 | | TEN | Tennant Cr. | | 0.003 | | | | | | | | 184 | 184 | 377 | 377 | 178 | 0.96 |
| TEN45 | | pipe | | 12 | 0.003 | 2 | 18 | 24 | | 24 | | | 6 | 6 | 10 | 10 | 2 | 0.01 |
| C40 | | TEN | Tennant Creek | | 0.003 | | | | | | | | 187 | 187 | 381 | 381 | 180 | 0.97 |
| TEN50 | SOR7 | pipe | | 18 | 0.007 | 8 | 24 | 30 | | 37 | | | 15 | 15 | 25 | 25 | 6 | 0.03 |
| R55 | SOR5 | pipe | n/a | 24 | 0.013 | 22 | 18 | 24 | | 50 | | | 15 | 15 | 24 | 24 | 6 | 0.03 |
| TEN55 | | pipe | | 15 | 0.006 | 4 | 12 | 18 | | 34 | | | 3 | 3 | 5 | 5 | 2 | 0.01 |
| C50 | SOR5 | pipe | Neptis | 24 | 0.013 | 22 | 24 | 24 | | 50 | | | 17 | 17 | 29 | 29 | 8 | 0.04 |
| C45 | | TEN | Tennant Creek | | 0.003 | | | | | | | | 193 | 193 | 394 | 394 | 186 | 1.01 |
| R60 | | TEN | Tennant Creek | | 0.005 | | | | | | | | 193 | 193 | 393 | 393 | 186 | 1.01 |
| TEN60 | CIM2 | pipe | | 12 | 0.005 | 2 | 24 | 24 | | 31 | | | 11 | 11 | 18 | 18 | 4 | 0.02 |
| C55 | | TEN | Tennant Creek | | 0.003 | | | | | | | | 197 | 197 | 400 | 400 | 192 | 1.03 |
| TEN68 | | ditch | | | 0.061 | | 18 | 24 | 3 | 109 | | | 18 | 18 | 41 | 41 | 20 | 0.12 |
| R70 | | ditch | n/a | | 0.043 | | 18 | 24 | 3 | 91 | | | 18 | 18 | 41 | 41 | 20 | 0.12 |
| TEN70 | | ditch | | | 0.022 | | 24 | 30 | 3 | 65 | | | 24 | 26 | 41 | 44 | 14 | 0.06 |
| C68 | GAL4 | pipe be | Gallop | | 0.043 | | | | | | | | 34 | 37 | 69 | 71 | 32 | 0.18 |
| R75 | FOU10 | pipe | Fountain Oaks | 36 | 0.017 | 76 | 30 | 36 | | 57 | | | 33 | 37 | 69 | 71 | 32 | 0.18 |
| TEN75 | | pipe | | 33 | 0.017 | 60 | 30 | 36 | | 57 | | | 38 | 38 | 64 | 64 | 16 | 0.07 |
| C70 | FOU12 | pipe | Fountain Ave. | 36 | 0.005 | 41 | 42 | 54 | | 31 | 43 | 48 | 63 | 66 | 115 | 120 | 48 | 0.25 |
| C60 | | TEN | Tennant Creek | | 0.003 | | | | | | | | 242 | 242 | 491 | 491 | 240 | 1.28 |
| TEN76 | | ditch | | | 0.013 | | 30 | 36 | 4 | 50 | | | 7 | 42 | 14 | 63 | 10 | 0.04 |
| C75 | | TEN | Tennant Creek | | 0.003 | | | | | | | | 249 | 249 | 505 | 505 | 250 | 1.31 |
| R128 | | TEN | Tennant Creek | | 0.003 | | | | | | | | 249 | 249 | 504 | 504 | 250 | 1.31 |
| TEN80 | | ditch | | | 0.065 | | 18 | 24 | 3 | 112 | | | 30 | 30 | 58 | 58 | 22 | 0.12 |
| R85 | | ditch | n/a | | 0.069 | | 18 | 24 | 3 | 116 | | | 30 | 30 | 58 | 58 | 22 | 0.12 |
| TEN85 | | ditch | | | 0.114 | | 12 | 12 | 2 | 149 | | | 10 | 10 | 16 | 16 | 4 | 0.02 |
| C80 | | pipe | Trail Dr. | 30 | 0.069 | 94 | 24 | 24 | | 116 | | | 37 | 37 | 70 | 70 | 26 | 0.14 |
| R90 | | ditch | n/a | | 0.029 | | 24 | 30 | 3 | 75 | | | 37 | 37 | 70 | 70 | 26 | 0.14 |
| TEN90 | | pipe | | 36 | 0.01 | 58 | 24 | 24 | | 44 | | | 14 | 14 | 24 | 24 | 6 | 0.03 |
| C85 | SOR2 | pipe | Sorrel/Calico | 36 | 0.003 | 32 | 42 | 54 | | 24 | 36 | 36 | 50 | 50 | 92 | 92 | 32 | 0.17 |
| TEN105 | | ditch | | | 0.057 | | 18 | 24 | 3 | 105 | | | 22 | 22 | 40 | 41 | 14 | 0.08 |
| TEN110 | | ditch | | | 0.062 | | 18 | 24 | 3 | 110 | | | 19 | 19 | 36 | 36 | 12 | 0.06 |
| C105 | BAR2 | pipe | Trail/Mira Bella | 36 | 0.022 | 86 | 30 | 36 | | 65 | | | 41 | 41 | 76 | 76 | 28 | 0.14 |
| TEN115 | | ditch | | | 0.067 | | 24 | 30 | 3 | 114 | | | 51 | 51 | 99 | 99 | 38 | 0.17 |
| R120 | MIR1 | pipe | Mira Bella | 48 | 0.019 | 172 | 30 | 42 | | 61 | | | 51 | 51 | 99 | 99 | 38 | 0.17 |
| TEN120 | | pipe | | 42 | 0.019 | 121 | 18 | 24 | | 61 | | | 17 | 17 | 28 | 28 | 8 | 0.03 |
| C115 | TRA16 | pipe | Trail/Mira Bella | 42 | 0.003 | 48 | 48 | 60 | | 24 | 45 | 45 | 61 | 61 | 117 | 117 | 44 | 0.20 |
| C110 | BAR1 | pipe | Barrett Ave. | 42 | 0.022 | 130 | 36 | 48 | | 65 | | | 95 | 96 | 183 | 184 | 72 | 0.34 |
| R125 | BAR4 | pipe | Barrett Ave. | 54 | 0.022 | 253 | 36 | 48 | | 65 | | | 95 | 96 | 183 | 184 | 72 | 0.34 |
| TEN125 | | street | | | 0.014 | | 12 | 12 | | 52 | | | 3 | 3 | 5 | 5 | 2 | 0.00 |
| C120 | BAR1 | pipe | Barrett/Sorrel | 54 | 0.022 | 253 | 36 | 48 | | 65 | | | 97 | 97 | 186 | 187 | 72 | 0.34 |
| C90 | BAR4 | pipe | Barrett/Sorrel | 60 | 0.022 | 336 | 42 | 54 | | 65 | | | 147 | 147 | 279 | 279 | 106 | 0.51 |
| R127 | BAR3 | pipe | Barrett Ave. | 60 | 0.016 | 286 | 48 | 60 | | 56 | | | 147 | 147 | 278 | 279 | 106 | 0.51 |
| TEN127 | BAR4 | pipe | | 27 | 0.01 | 27 | 24 | 30 | | 44 | | | 20 | 20 | 33 | 33 | 8 | 0.04 |
| P127 | BAR4 | pond | #43 Oak Glen Tract 8481 | | | | | | | | | | 10 | 10 | 15 | 15 | 8 | 0.04 |
| C125 | BAR3 | pipe | Barrett/Tennant cr. | 60 | 0.016 | 286 | 48 | 60 | | 56 | | | 157 | 158 | 293 | 293 | 114 | 0.55 |
| C76 | | TEN | Tennant Creek | | 0.003 | | | | | | | | 376 | 378 | 745 | 745 | 364 | 1.86 |
| TEN128 | | street | | | 0.006 | | 18 | 30 | | 34 | | | 6 | 9 | 11 | 27 | 8 | 0.03 |
| C127 | | TEN | Tennant Creek | | 0.003 | | | | | | | | 381 | 382 | 755 | 755 | 370 | 1.89 |
| R140 | | TEN | Tennant Creek | | 0.004 | | | | | | | | 380 | 381 | 754 | 754 | 370 | 1.89 |
| TEN130 | | ditch | | | 0.064 | | 24 | 24 | 3 | 111 | | | 35 | 35 | 65 | 65 | 24 | 0.11 |
| R135 | | ditch | n/a | | 0.015 | | 30 | 36 | 4 | 54 | | | 34 | 34 | 65 | 65 | 24 | 0.11 |
| TEN125 | | ditch | | | 0.015 | | 24 | 30 | 3 | 54 | | | 28 | 28 | 51 | 51 | 30 | 0.13 |
| C130 | | ditch | Tennant Ave. | | 0.003 | | 48 | 60 | 6 | 24 | | | 62 | 62 | 115 | 115 | 54 | 0.24 |
| C128 | | TEN | Tennant Creek at Tennant | | 0.003 | | | | | | | | 441 | 442 | 866 | 866 | 424 | 2.13 |
| TEN140 | | ditch | | | 0.005 | | 18 | 24 | 3 | 31 | | | 7 | 7 | 14 | 14 | 8 | 0.05 |
| C135 | | TEN | Tennant Ave. | | 0.003 | | | | | | | | 447 | 448 | 880 | 880 | 432 | 2.18 |
| R160 | | TEN | Tennant Creek | | 0.005 | | | | | | | | 447 | 448 | 879 | 879 | 432 | 2.18 |
| TEN145 | | ditch | | | 0.073 | | 18 | 30 | 3 | 119 | | | 33 | 33 | 76 | 76 | 38 | 0.26 |
| R150 | | ditch | n/a | | 0.047 | | 24 | 30 | 3 | 95 | | | 33 | 33 | 76 | 76 | 38 | 0.26 |
| TEN150 | | ditch | | | 0.013 | | 24 | 36 | 4 | 50 | | | 29 | 29 | 53 | 53 | 24 | 0.11 |
| C145 | | ditch | Foothill | | 0.02 | | 30 | 42 | 4 | 62 | | | 61 | 61 | 128 | 128 | 62 | 0.37 |
| R155 | | ditch | n/a | | 0.014 | | 36 | 48 | 5 | 52 | | | 61 | 61 | 128 | 128 | 62 | 0.37 |

# Appendix A4 Tennant Creek Capacities and Design Flows
## Storm Drainage Master Plan
## City of Morgan Hill

| HEC1 OPER | PIPE NODE NAME | TYPE | LOCATION | PIPE SIZE (in) | SLOPE | PIPE EXIST CAP (cfs) | PIPE 10-YR FUTURE dia (in) | PIPE 100-YR FUTURE dia (in) | DITCH 100-YR FUTURE width (ft) | STREET CAPACITY 40 ft/.025 (cfs) | 100 YR EXIST EXCESS FLOW >10 (cfs) | 100 YR 2020 EXCESS FLOW >10 (cfs) | 10-YR EXISTING HEC1 (cfs) | 10-YR 2020 HEC-1 (cfs) | 100-YR EXISTING HEC-1 (cfs) | 100-YR 2020 HEC-1 (cfs) | 100 YR VOL 2020 (ac ft) | AREA (sq. mi) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TEN155 | | ditch | | | 0.011 | | 30 | 36 | 4 | 46 | | | 30 | 30 | 54 | 54 | 28 | 0.13 |
| C150 | | ditch | Fisher/Tennant cr. | | 0.004 | | 48 | 66 | 7 | 28 | | | 91 | 91 | 183 | 183 | 90 | 0.50 |
| C140 | | TEN | Tennant Creek | | 0.003 | | | | | | | | 538 | 539 | 1061 | 1061 | 524 | 2.67 |
| TEN160 | | ditch | | | 0.004 | | 18 | 24 | 3 | 28 | | | 6 | 6 | 13 | 13 | 8 | 0.04 |
| C155 | | TEN | Tennant Creek | | 0.003 | | | | | | | | 544 | 545 | 1074 | 1074 | 530 | 2.72 |
| R180 | | TEN | Tennant Creek | | 0.005 | | | | | | | | 543 | 545 | 1072 | 1072 | 530 | 2.72 |
| TEN165 | | ditch | | | 0.065 | | 30 | 42 | 4 | 112 | | | 110 | 110 | 222 | 222 | 96 | 0.44 |
| R170 | | ditch | n/a | | 0.024 | | 36 | 48 | 5 | 68 | | | 110 | 110 | 222 | 222 | 96 | 0.44 |
| TEN170 | | ditch | | | 0.011 | | 30 | 36 | 4 | 46 | | | 38 | 38 | 70 | 70 | 34 | 0.15 |
| C165 | | ditch | Foothill | | 0.01 | | 54 | 66 | 7 | 44 | | | 149 | 149 | 292 | 292 | 130 | 0.60 |
| R175 | | ditch | n/a | | 0.012 | | 48 | 66 | 6 | 48 | | | 149 | 149 | 291 | 291 | 130 | 0.60 |
| TEN175 | | ditch | | | 0.013 | | 30 | 42 | 4 | 50 | | | 47 | 47 | 85 | 85 | 42 | 0.18 |
| C170 | | ditch | Hill | | 0.005 | | 66 | 84 | 8 | 31 | | | 195 | 195 | 376 | 376 | 172 | 0.77 |
| C160 | | TEN | Tennant Creek at Maple | | 0.003 | | | | | | | | 736 | 738 | 1440 | 1441 | 704 | 3.49 |
| TEN180 | | street | | | 0.006 | | 18 | 24 | | 34 | | | 7 | 7 | 15 | 15 | 10 | 0.05 |
| C175 | | TEN | Tennant Creek at Maple | | 0.003 | | | | | | | | 743 | 745 | 1455 | 1456 | 714 | 3.54 |

# Appendix A5 Madrone Channel Capacities and Design Flows
## Storm Drainage Master Plan
## City of Morgan Hill

| HEC1 OPER | PIPE NODE NAME | TYPE | LOCATION | PIPE SIZE (in) | SLOPE | PIPE EXIST CAP (cfs) | PIPE 10-YR FUTURE dia (in) | PIPE 100-YR FUTURE dia (in) | DITCH 100-YR FUTURE width (ft) | STREET CAPACITY 40 ft/.025 (cfs) | 100 YR EXIST EXCESS FLOW >10 (cfs) | 100 YR 2020 EXCESS FLOW >10 (cfs) | 10-YR EXISTING HEC1 (cfs) | 10-YR 2020 HEC-1 (cfs) | 100-YR EXISTING HEC-1 (cfs) | 100-YR 2020 HEC-1 (cfs) | 100 YR VOL 2020 (ac ft) | AREA (sq. mi) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MAD5** | | ditch | | | 0.0090 | | 18 | 24 | 3 | 42 | | | 7 | 9 | 11 | 15 | 4 | 0.02 |
| **R10** | | ditch | | | 0.0080 | | 18 | 24 | 3 | 39 | | | 6 | 8 | 11 | 14 | 4 | 0.02 |
| **MAD10** | | ditch | | | 0.0080 | | 18 | 24 | 3 | 39 | | | 6 | 11 | 11 | 19 | 6 | 0.03 |
| **C5** | | ditch | | | 0.0306 | | 18 | 24 | 3 | 77 | | | 11 | 15 | 21 | 26 | 10 | 0.05 |
| **R15** | cap3 | pipe | n/a | 24 | 0.0020 | ***15*** | 30 | 36 | | 20 | | | 11 | 14 | 20 | 23 | 10 | 0.05 |
| **MAD15** | mis2 | pipe | | 42 | 0.0020 | ***60*** | 30 | 36 | | 20 | | | 18 | 18 | 31 | 31 | 10 | 0.05 |
| **C10** | mis3 | pipe | | 48 | 0.0020 | ***41*** | 36 | 48 | | 20 | | | 24 | 31 | 43 | 53 | 20 | 0.10 |
| **MAD20** | | ditch | | | 0.0100 | | 24 | 24 | 3 | 44 | | | 5 | 16 | 11 | 25 | 6 | 0.03 |
| **C15** | coc1 | pipe | | 48 | 0.0053 | ***44*** | 36 | 48 | | 32 | | | 28 | 46 | 52 | 77 | 26 | 0.12 |
| **P20** | coc2 | pond | #34 Cochrane Road | | | | | | | | | | 20 | 21 | 32 | 32 | 26 | 0.12 |
| **R25** | coc4 | pipe | Start Madrone Channe | 48 | 0.0050 | ***58*** | 30 | 30 | | 31 | | | 20 | 21 | 32 | 32 | 26 | 0.12 |
| **R30A** | | MAD | US 101 | | 0.0033 | | | | 4 | | | | 20 | 21 | 32 | 32 | 26 | 0.12 |
| **MAD25** | mis6 | pipe | | 24 | 0.0030 | 11 | 36 | 42 | | 24 | -28 | 19 | 29 | 34 | 7 | 54 | 10 | 0.05 |
| **R30B** | stl4 | pipe | n/a | 48 | 0.0020 | 56 | 36 | 48 | | 20 | | | 28 | 32 | 43 | 49 | 10 | 0.05 |
| **MAD30** | | ditch | | | 0.0020 | | 42 | 48 | 5 | 20 | | | 8 | 41 | 16 | 62 | 14 | 0.05 |
| **C25** | stl5 | pipe | n/a | 42 | 0.0036 | 52 | 48 | 54 | | 26 | -26 | 32 | 32 | 73 | 53 | 111 | 26 | 0.10 |
| **P30** | stl9 | pond | #35 St. Louis Health Center Private | | | | | | | | | | 15 | 21 | 22 | 29 | 26 | 0.10 |
| **C20** | | MAD | US 101 | | 0.0033 | | | | 5 | | | | 35 | 42 | 54 | 60 | 52 | 0.22 |
| **R55A** | | MAD | US 101 | | 0.0033 | | | | 5 | | | | 35 | 42 | 54 | 60 | 52 | 0.22 |
| **MAD33** | | ditch | | | 0.0050 | | 24 | 30 | 3 | 31 | | | 9 | 14 | 17 | 24 | 10 | 0.04 |
| **R35** | | ditch | | | 0.0080 | | 24 | 24 | 3 | 39 | | | 9 | 14 | 17 | 24 | 10 | 0.04 |
| **MAD35** | | ditch | | | 0.0080 | | 18 | 24 | 3 | 39 | | | 6 | 12 | 12 | 19 | 6 | 0.03 |
| **C33** | | ditch | | | 0.0080 | | 24 | 30 | 4 | 39 | | | 1 | 22 | 28 | 38 | 16 | 0.07 |
| **R50A** | | ditch | | | 0.0050 | | 30 | 36 | 4 | 31 | | | 14 | 22 | 28 | 38 | 16 | 0.07 |
| **MAD38** | | ditch | | | 0.0060 | | 30 | 36 | 4 | 34 | | | 19 | 30 | 37 | 52 | 20 | 0.09 |
| **MAD40** | | ditch | | | 0.1030 | | 18 | 18 | 2 | 141 | | | 18 | 18 | 35 | 35 | 12 | 0.05 |
| **R45** | | ditch | | | 0.0060 | | 24 | 30 | 4 | 34 | | | 18 | 18 | 35 | 35 | 12 | 0.05 |
| **MAD45** | | ditch | | | 0.0080 | | 30 | 36 | 4 | 39 | | | 13 | 25 | 26 | 43 | 14 | 0.06 |
| **C40** | | ditch | Peet/Half Rd. | | 0.0070 | | 30 | 42 | 4 | 37 | | | 30 | 35 | 60 | 62 | 26 | 0.11 |
| **C38** | | ditch | Peet/Half Rd. | | 0.0070 | | 42 | 48 | 5 | 37 | | | 47 | 65 | 94 | 114 | 46 | 0.20 |
| **R50B** | | ditch | Half Rd. | | 0.0070 | | 42 | 48 | 5 | 37 | | | 47 | 61 | 93 | 109 | 46 | 0.20 |
| **MAD50** | | ditch | | | 0.0060 | | 30 | 42 | 4 | 34 | | | 32 | 32 | 63 | 63 | 28 | 0.15 |
| **C45** | | ditch | Half/Under Construction | | 0.0070 | | 42 | 54 | 6 | 37 | | | 79 | 84 | 156 | 156 | 74 | 0.36 |
| **C35** | | ditch | Half Rd. | | 0.0070 | | 48 | 60 | 6 | 37 | | | 92 | 103 | 181 | 189 | 90 | 0.43 |
| **R55B** | | ditch | Half Rd. | | 0.0050 | | 48 | 66 | 6 | 31 | | | 92 | 100 | 181 | 185 | 90 | 0.43 |
| **MAD55** | | ditch | | | 0.0030 | | 42 | 54 | 6 | 24 | | | 19 | 57 | 37 | 92 | 24 | 0.10 |
| **C50** | | ditch | Half/Condit | | 0.0050 | | 54 | 66 | 7 | 31 | | | 110 | 126 | 218 | 229 | 112 | 0.53 |
| **C30** | | MAD | US 101/Half Road | | 0.0033 | | | | 8 | | | | 143 | 159 | 264 | 274 | 164 | 0.75 |
| **R85A** | | MAD | US 101 | | 0.0033 | | | | 8 | | | | 143 | 157 | 264 | 272 | 164 | 0.75 |
| **MAD60** | | ditch | | | 0.1550 | | 18 | 24 | 3 | 173 | | | 35 | 35 | 76 | 76 | 26 | 0.14 |
| **MAD62** | | ditch | | | 0.1590 | | 12 | 18 | 2 | 175 | | | 14 | 14 | 32 | 32 | 12 | 0.07 |
| **C60** | mai14 | pipe | Main/Coyote | 24 | 0.0080 | 18 | 36 | 48 | | 39 | 51 | 51 | 50 | 50 | 108 | 108 | 38 | 0.21 |
| **R65** | mai13 | pipe | Main | 36 | 0.0080 | 52 | 36 | 48 | | 39 | 17 | 17 | 50 | 50 | 108 | 108 | 38 | 0.21 |
| **MAD65** | | ditch | | | 0.0060 | | 30 | 42 | 4 | 34 | | | 29 | 29 | 63 | 63 | 38 | 0.20 |
| **C62** | | ditch | Main | | 0.0064 | | 42 | 60 | 6 | 35 | | | 77 | 77 | 165 | 165 | 76 | 0.41 |
| **R75** | | ditch | Main | | 0.0040 | | 48 | 66 | 6 | 28 | | | 77 | 77 | 164 | 164 | 76 | 0.41 |
| **MAD75** | | ditch | | | 0.0030 | | 30 | 36 | 4 | 24 | | | 11 | 15 | 24 | 29 | 18 | 0.09 |
| **C65** | mai13 | pipe | Main | 24 | 0.0064 | 16 | 48 | 60 | | 35 | 136 | 139 | 86 | 88 | 187 | 190 | 94 | 0.51 |
| **R80** | mai7 | pipe | Main | 24 | 0.0030 | 11 | 54 | 66 | | 24 | 136 | 138 | 81 | 83 | 171 | 173 | 94 | 0.51 |
| **MAD80** | | ditch | | | 0.0030 | | 36 | 48 | 5 | 24 | | | 35 | 35 | 58 | 58 | 22 | 0.09 |
| **C75** | mai7 | pipe | Main | 36 | 0.0035 | 34 | 54 | 72 | | 26 | 149 | 154 | 99 | 103 | 209 | 214 | 114 | 0.60 |
| **R85B** | | ditch | Main | | 0.0060 | | 48 | 66 | 7 | 34 | | | 99 | 103 | 209 | 214 | 114 | 0.60 |
| **MAD85** | | ditch | | | 0.0030 | | 42 | 48 | 5 | 24 | | | 15 | 40 | 31 | 66 | 26 | 0.11 |
| **C80** | | ditch | Main/Condit | | 0.0017 | | 66 | 90 | 9 | 18 | | | 111 | 135 | 239 | 269 | 140 | 0.72 |
| **C55** | | MAD | US 101/Main Ave. | | 0.0033 | | | | 10 | | | | 246 | 287 | 477 | 534 | 306 | 1.47 |
| **R135A** | | MAD | US 101 | | 0.0033 | | | | 10 | | | | 246 | 286 | 476 | 533 | 306 | 1.47 |
| **MAD90** | dia2 | pipe | | 21 | 0.0070 | ***12*** | 24 | 30 | | 37 | | | 13 | 13 | 25 | 25 | 12 | 0.06 |
| **MAD95** | jus2 | pipe | | 18 | 0.0040 | ***7*** | 24 | 30 | | 28 | | | 11 | 11 | 20 | 20 | 6 | 0.03 |
| **MAD100** | rin2 | ditch | | | 0.0020 | ***7*** | 12 | 18 | 2 | 20 | | | 2 | 2 | 5 | 5 | 2 | 0.01 |
| **C95** | | ditch | Jean Ct. | | 0.0020 | | 30 | 36 | 4 | 20 | | | 13 | 13 | 24 | 24 | 10 | 0.05 |
| **R105** | rin2 | pipe | Ringel | 24 | 0.0020 | ***7*** | 24 | 36 | | 20 | | | 12 | 12 | 22 | 22 | 10 | 0.05 |
| **MAD105** | rin3 | pipe | | 30 | 0.0080 | ***16*** | 18 | 24 | | 39 | | | 8 | 8 | 14 | 14 | 4 | 0.02 |
| **C100** | rin5 | pipe | Ringel/Diana | 30 | 0.0019 | 16 | 30 | 42 | | 19 | | | 18 | 18 | 33 | 33 | 14 | 0.07 |
| **C90** | dia3 | pipe | Ringel/Diana | 42 | 0.0020 | ***61*** | 36 | 48 | | 20 | | | 29 | 29 | 55 | 55 | 26 | 0.13 |
| **R110** | dia3 | pipe | Diana | 48 | 0.0020 | ***61*** | 36 | 48 | | 20 | | | 29 | 29 | 54 | 54 | 26 | 0.13 |
| **MAD110** | | ditch | | | 0.0020 | | 42 | 54 | 6 | 20 | | | 41 | 44 | 77 | 80 | 40 | 0.17 |
| **C105** | dia4 | pipe | Diana/Murphy | 48 | 0.0034 | ***61*** | 48 | 60 | | 26 | 39 | 41 | 67 | 68 | 126 | 128 | 66 | 0.30 |
| **MAD120** | | street | | | 0.0030 | | 18 | 18 | | 24 | | | 4 | 4 | 7 | 7 | 2 | 0.01 |
| **C110** | dia7 | pipe | Murphy | 60 | 0.0220 | 144 | 48 | 60 | | 29 | | | 69 | 70 | 131 | 132 | 70 | 0.31 |
| **R135B** | dia7 | pipe | Diana | 60 | 0.0043 | ***144*** | 48 | 60 | | 29 | | | 69 | 70 | 130 | 132 | 70 | 0.31 |
| **C120** | | MAD | US 101/Diana Ave | | 0.0033 | | | | 11 | | | | 313 | 353 | 605 | 659 | 374 | 1.78 |
| **MAD125** | | pipe | | 18 | 0.0110 | 10 | 12 | 18 | | 46 | | | 5 | 5 | 9 | 9 | 4 | 0.02 |
| **R135C** | dia30 | pipe | Diana/Condit | 24 | 0.0020 | ***22*** | 18 | 24 | | 20 | | | 4 | 4 | 8 | 8 | 4 | 0.02 |
| **C85** | | MAD | US 101 | | 0.0033 | | | | 11 | | | | 316 | 356 | 611 | 665 | 378 | 1.80 |
| **MAD130** | | ditch | | | 0.0050 | | 30 | 42 | 4 | 31 | | | 12 | 32 | 23 | 51 | 14 | 0.07 |
| **R135D** | dia7 | pipe | Diana | 60 | 0.0110 | 144 | 30 | 36 | | 46 | | | 12 | 32 | 23 | 51 | 14 | 0.07 |
| **MAD135** | | ditch | | | 0.0020 | | 30 | 36 | 4 | 20 | | | 7 | 16 | 13 | 26 | 10 | 0.04 |
| **C130** | dia7 | pipe | Diana | 60 | 0.0114 | 144 | 30 | 42 | | 47 | | | 18 | 48 | 36 | 77 | 24 | 0.11 |
| **C125** | | MAD | US 101/Diana Ave | | 0.0033 | | | | 11 | | | | 332 | 381 | 642 | 709 | 402 | 1.90 |
| **R225A** | | MAD | US 101 | | 0.0033 | | | | 11 | | | | 332 | 380 | 642 | 707 | 402 | 1.90 |
| **MAD140** | edu1 | pipe | | 21 | 0.0020 | ***2*** | 18 | 24 | | 20 | | | 6 | 6 | 10 | 11 | 4 | 0.01 |
| **R145** | edu2 | pipe | E. Dunne | 24 | 0.0030 | ***14*** | 18 | 24 | | 24 | | | 6 | 6 | 10 | 10 | 4 | 0.01 |
| **MAD145** | hea1 | pipe | | 24 | 0.0100 | ***7*** | 18 | 18 | | 44 | | | 6 | 6 | 11 | 11 | 2 | 0.01 |
| **C140** | edu3 | pipe | E. Dunne | 24 | 0.0095 | ***20*** | 18 | 24 | | 43 | | | 11 | 11 | 19 | 19 | 6 | 0.03 |
| **R160A** | edu3 | pipe | E. Dunne | 24 | 0.0050 | ***20*** | 24 | 30 | | 31 | | | 11 | 11 | 18 | 19 | 6 | 0.03 |
| **MAD150** | con7 | pipe | | 12 | 0.0060 | ***6*** | 12 | 18 | | 34 | | | 2 | 3 | 3 | 5 | 2 | 0.01 |
| **R155** | con2 | pipe | Conte | 24 | 0.0020 | ***10*** | 18 | 18 | | 20 | | | 2 | 3 | 3 | 5 | 2 | 0.01 |
| **MAD155** | con2 | pipe | | 21 | 0.0020 | ***10*** | 18 | 18 | | 20 | | | 3 | 4 | 5 | 6 | 2 | 0.01 |
| **C150** | con2 | pipe | n/a | 21 | 0.0020 | ***10*** | 18 | 24 | | 20 | | | 4 | 6 | 8 | 10 | 4 | 0.02 |
| **P155** | con3 | pond | #36 Diambrosio Tract 8444 | | | | | | | | | | 3 | 4 | 6 | 6 | 4 | 0.02 |
| **R160B** | tas1 | pipe | Tassajara Cir. | 24 | 0.0040 | ***6*** | 18 | 18 | | 28 | | | 3 | 4 | 6 | 6 | 4 | 0.02 |
| **MAD160** | tas1 | pipe | | 21 | 0.0080 | ***6*** | 18 | 24 | | 39 | | | 8 | 8 | 13 | 13 | 4 | 0.02 |
| **C155** | tas3 | pipe | E. Dunne | 30 | 0.0014 | ***8*** | 24 | 30 | | 16 | | | 10 | 10 | 17 | 17 | 8 | 0.04 |
| **MAD165** | edu3 | pipe | | 30 | 0.0030 | ***20*** | 24 | 24 | | 24 | | | 9 | 9 | 14 | 14 | 2 | 0.01 |
| **C145** | edu3 | pipe | E. Dunne/Tassajara | 30 | 0.0014 | ***20*** | 36 | 42 | | 16 | | | 19 | 20 | 31 | 32 | 10 | 0.05 |
| **C160** | edu3 | pipe | E. Dunne | 30 | 0.0014 | ***20*** | 42 | 48 | | 16 | 11 | 12 | 28 | 29 | 47 | 48 | 16 | 0.08 |
| **MAD168** | pea1 | pipe | | 18 | 0.0050 | ***5*** | 18 | 18 | | 31 | | | 3 | 5 | 6 | 8 | 2 | 0.01 |
| **P168** | pea3 | pond | #37 Pear Drive | | | | | | | | | | 2 | 2 | 5 | 6 | 2 | 0.01 |
| **MAD170** | | ditch | | | 0.0030 | | 12 | 18 | 2 | 24 | | | 3 | 3 | 5 | 5 | 2 | 0.01 |
| **C168** | pea4 | pipe | n/a | 18 | 0.0026 | ***2*** | 18 | 24 | | 22 | | | 4 | 4 | 10 | 10 | 6 | 0.03 |

# Appendix A5 Madrone Channel Capacities and Design Flows
## Storm Drainage Master Plan
## City of Morgan Hill

| HEC1 OPER | PIPE NODE NAME | TYPE | LOCATION | PIPE SIZE (in) | SLOPE | PIPE EXIST CAP (cfs) | PIPE 10-YR FUTURE dia (in) | PIPE 100-YR FUTURE dia (in) | DITCH 100-YR FUTURE width (ft) | STREET CAPACITY 40 ft/.025 (cfs) | 100 YR EXIST EXCESS FLOW >10 (cfs) | 100 YR 2020 EXCESS FLOW >10 (cfs) | 10-YR EXISTING HEC1 (cfs) | 10-YR 2020 HEC-1 (cfs) | 100-YR EXISTING HEC-1 (cfs) | 100-YR 2020 HEC-1 (cfs) | 100 YR VOL 2020 (ac ft) | AREA (sq. mi) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **R175** | | ditch | Morgan | | 0.0090 | | 12 | 18 | 2 | 42 | | | 4 | 4 | 11 | 11 | 6 | 0.03 |
| **MAD175** | | street | | | 0.0040 | | 24 | 24 | | 28 | | | 7 | 7 | 13 | 14 | 6 | 0.03 |
| **C170** | alm3 | pipe | Morgan | 18 | 0.0055 | ***7*** | 24 | 30 | | 33 | | | 11 | 11 | 23 | 23 | 12 | 0.06 |
| **R180** | per1 | pipe | Almond | 24 | 0.0050 | ***8*** | 24 | 30 | | 31 | | | 11 | 11 | 22 | 22 | 12 | 0.06 |
| **MAD180** | blu1 | street | | | 0.0050 | ***17*** | 30 | 30 | | 31 | | | 14 | 14 | 25 | 25 | 8 | 0.04 |
| **C175** | bay3 | pipe | Bayo Claro | 21 | 0.0031 | ***20*** | 30 | 42 | | 24 | | | 23 | 24 | 42 | 43 | 20 | 0.10 |
| **C165** | edu4 | pipe | E. Dunne/Bayo Claro | 21 | 0.0021 | ***25*** | 48 | 54 | | 20 | 35 | 40 | 48 | 50 | 80 | 85 | 36 | 0.18 |
| **R200** | edu4 | pipe | E. Dunne | 36 | 0.0040 | ***25*** | 42 | 48 | | 28 | 27 | 29 | 46 | 47 | 80 | 82 | 36 | 0.18 |
| **MAD184** | alm1 | ditch | | | 0.0060 | ***10*** | 24 | 24 | 3 | 34 | | | 10 | 11 | 19 | 20 | 6 | 0.04 |
| **R185** | asp1 | pipe | Almond | 24 | 0.0030 | ***15*** | 24 | 30 | | 24 | | | 10 | 10 | 19 | 19 | 6 | 0.04 |
| **MAD185** | asp1 | pipe | | 27 | 0.0030 | ***15*** | 30 | 36 | | 24 | | | 22 | 22 | 36 | 36 | 8 | 0.04 |
| **C184** | asp1 | pipe | Aspen | 27 | 0.0021 | ***15*** | 36 | 42 | | 20 | 13 | 13 | 27 | 27 | 48 | 48 | 14 | 0.08 |
| **C180** | edu6 | pipe | E. Dunne | 30 | 0.0051 | ***34*** | 42 | 54 | | 31 | 61 | 61 | 72 | 72 | 126 | 126 | 52 | 0.26 |
| **MAD189** | | ditch | | | 0.0060 | | 18 | 18 | 2 | 34 | | | 2 | 5 | 4 | 9 | 4 | 0.02 |
| **R190** | jas1 | pipe | Jasmine | 24 | 0.0040 | ***11*** | 18 | 18 | | 28 | | | 2 | 5 | 4 | 8 | 4 | 0.02 |
| **MAD190** | jas3 | pipe | | 18 | 0.0040 | ***16*** | 24 | 30 | | 28 | | | 14 | 14 | 24 | 24 | 6 | 0.03 |
| **C189** | jas3 | pipe | Peppertree/Jasmine | 24 | 0.0069 | ***16*** | 24 | 30 | | 37 | | | 15 | 17 | 27 | 30 | 10 | 0.05 |
| **R195** | pep1 | ditch | Peppertree | | 0.0050 | ***10*** | 24 | 30 | 3 | 31 | | | 15 | 17 | 26 | 30 | 10 | 0.05 |
| **MAD195** | pep1 | pipe | | 27 | 0.0050 | ***10*** | 18 | 18 | | 31 | | | 5 | 5 | 9 | 9 | 2 | 0.01 |
| **C190** | pep1 | pipe | Peppertree Dr./Peppert | 27 | 0.0013 | ***10*** | 36 | 42 | | 16 | 8 | 11 | 19 | 21 | 34 | 37 | 12 | 0.06 |
| **C185** | edu7 | pipe | E. Dunne | 36 | 0.0076 | ***33*** | 42 | 54 | | 38 | 84 | 87 | 88 | 91 | 155 | 158 | 64 | 0.32 |
| **MAD200** | | pipe | | 36 | 0.0010 | 18 | 24 | 30 | | 14 | | | 8 | 8 | 12 | 12 | 2 | 0.01 |
| **C195** | edu8 | pipe | E. Dunne/Murphy | 48 | 0.0142 | ***38*** | 42 | 48 | | 52 | 76 | 79 | 96 | 99 | 167 | 170 | 66 | 0.33 |
| **MAD205** | | pipe | | 48 | 0.0020 | 56 | 24 | 30 | | 20 | | | 8 | 8 | 13 | 14 | 4 | 0.01 |
| **C206** | edu8.5 | pipe | E. Dunne | 48 | 0.0020 | 54 | | | | | | | 103 | 105 | 178 | 181 | 70 | 0.35 |
| **MAD207** | | pipe | | | 0.0020 | | | | | | | | 2 | 2 | 4 | 4 | 2 | 0.01 |
| **EDU8.5** | | pipe | E. Dunne | 48 | 0.0020 | 54 | 48 | | | 40 | 51 | 53 | 105 | 107 | 181 | 184 | 72 | 0.35 |
| **NORD** | | pipe | | | 0.0020 | | | | | | | | 56 | 56 | 56 | 56 | 62 | 0.35 |
| **DIV** | | pipe | | | 0.0020 | | | | | | | | 49 | 51 | 125 | 128 | 10 | 0.35 |
| **P208** | | pond | Nordstrom Pond | 36 | | | | | | | | | 4 | 1 | 51 | 48 | 6 | 0.35 |
| **RET** | | pipe | | | 0.0020 | | | | | | | | 56 | 56 | 56 | 56 | 62 | 0.00 |
| **C209** | edu9 | pipe | E. Dunne/Murphy | 48 | 0.0083 | ***165*** | 48 | 60 | | 40 | | | 60 | 57 | 107 | 104 | 68 | 0.35 |
| **MAD210** | mur1 | pipe | | 15 | 0.0050 | ***2*** | 18 | 24 | | 31 | | | 6 | 6 | 10 | 10 | 4 | 0.01 |
| **C205** | | ditch | Murphy | | 0.0143 | | 42 | 54 | 5 | 53 | | | 63 | 62 | 111 | 108 | 70 | 0.37 |
| **R215** | edu9 | pipe | | 48 | 0.0070 | ***165*** | 48 | 60 | | 37 | | | 63 | 62 | 111 | 108 | 70 | 0.37 |
| **MAD215** | | ditch | | | 0.0040 | | 24 | 30 | 4 | 28 | | | 12 | 16 | 22 | 27 | 12 | 0.05 |
| **C210** | edu10 | pipe | E. Dunne | 48 | 0.0070 | ***59*** | 54 | 66 | | 37 | 33 | 27 | 74 | 77 | 129 | 123 | 82 | 0.42 |
| **MAD216** | | street | | | 0.0050 | | 18 | 18 | | 31 | | | 3 | 3 | 4 | 4 | 0 | 0.00 |
| **P216** | con10 | pond | #38 East Dunne Ave. No. 2 | | | | | | | | | | 2 | 2 | 3 | 3 | 0 | 0.00 |
| **C215** | con11 | pipe | E. Dunne/Condit | 48 | 0.0107 | ***67*** | 48 | 60 | | 46 | 18 | 12 | 76 | 79 | 130 | 124 | 82 | 0.43 |
| **MAD220** | | pipe | | 21 | 0.0050 | 10 | 18 | 18 | | 31 | | | 6 | 6 | 8 | 8 | 2 | 0.00 |
| **C216** | edu12 | pipe | Diana Ave. | 48 | 0.0033 | 72 | 60 | 72 | | 25 | 34 | 28 | 79 | 83 | 131 | 125 | 84 | 0.43 |
| **MAD225** | | ditch | | | 0.0030 | | 30 | 30 | 3 | 24 | | | 9 | 25 | 17 | 23 | 10 | 0.04 |
| **C135** | dia10 | pipe | Diana Ave. | 60 | 0.0033 | 33 | 66 | 78 | | 25 | 87 | 80 | 88 | 106 | 145 | 138 | 94 | 0.47 |
| **C220** | | MAD | US 101 | | 0.0033 | | | | 12 | | | | 411 | 462 | 787 | 814 | 496 | 2.38 |
| **MAD226** | | street | | | 0.0050 | | 18 | 18 | | 31 | | | 3 | 3 | 4 | 4 | 0 | 0.00 |
| **P226** | hol1 | pond | #39 Holiday Inn | | | | | | | | | | 3 | 3 | 4 | 4 | 0 | 0.00 |
| **C225** | | MAD | US 101 | | 0.0033 | | | | 12 | | | | 412 | 463 | 788 | 815 | 496 | 2.38 |
| **MAD227** | | street | | | 0.0050 | | 54 | 54 | | 31 | | | 85 | 85 | 132 | 132 | 46 | 0.17 |
| **C226** | | MAD | US 101/East Dunne Ave. | | 0.0033 | | | | 13 | | | | 452 | 543 | 860 | 931 | 542 | 2.55 |
| **R265A** | | MAD | US 101 | | 0.0033 | | | | 13 | | | | 451 | 542 | 859 | 930 | 542 | 2.55 |
| **MAD228** | | ditch | | | 0.0030 | | 24 | 30 | 3 | 24 | | | 6 | 13 | 12 | 22 | 8 | 0.05 |
| **MAD229** | | street | | | 0.0040 | | 48 | 48 | | 28 | | | 48 | 48 | 74 | 74 | 14 | 0.06 |
| **P229** | pin1 | pond | #40 Pine Cone Court | | | | | | | | | | 41 | 41 | 64 | 64 | 14 | 0.06 |
| **C228** | sev2 | pipe | Sugarpine/Pinecone | 12 | 0.0030 | ***8*** | 42 | 54 | | 24 | 41 | 53 | 45 | 53 | 73 | 85 | 22 | 0.10 |
| **R230** | sev3 | pipe | Seville | 24 | 0.0020 | ***11*** | 42 | 54 | | 20 | 28 | 37 | 37 | 43 | 59 | 68 | 22 | 0.10 |
| **MAD230** | sev3 | pipe | | 24 | 0.0060 | ***11*** | 30 | 36 | | 34 | | | 13 | 27 | 25 | 43 | 10 | 0.04 |
| **MAD232** | pep10 | pipe | | 12 | 0.0100 | ***7*** | 12 | 18 | | 44 | | | 5 | 5 | 7 | 7 | 2 | 0.01 |
| **P232** | pep10 | pond | #41 Vintage Park Tract 8264 | | | | | | | | | | 5 | 5 | 6 | 6 | 2 | 0.01 |
| **C229** | pep10 | pipe | Peppertree | 12 | 0.0166 | ***7*** | 24 | 30 | | 57 | | | 16 | 31 | 31 | 49 | 12 | 0.05 |
| **C230** | sev6 | pipe | Peppertree/Seville | 12 | 0.0166 | ***7*** | 36 | 42 | | 57 | 26 | 47 | 52 | 66 | 89 | 110 | 34 | 0.15 |
| **MAD235** | | ditch | | | 0.0090 | | 12 | 18 | 2 | 42 | | | 3 | 5 | 5 | 9 | 2 | 0.01 |
| **C232** | sev5 | pipe | | 18 | 0.0029 | ***7*** | 48 | 60 | | 24 | 63 | 88 | 54 | 71 | 94 | 119 | 38 | 0.17 |
| **R260A** | | ditch | to San Pedro | | 0.0050 | | 42 | 54 | 6 | 31 | | | 54 | 71 | 94 | 118 | 38 | 0.17 |
| **MAD255** | | ditch | | | 0.0040 | | 24 | 30 | 3 | 28 | | | 5 | 16 | 10 | 26 | 6 | 0.03 |
| **C235** | sev7 | pipe | n/a | 33 | 0.0030 | ***30*** | 54 | 66 | | 24 | 49 | 89 | 59 | 87 | 103 | 143 | 44 | 0.20 |
| **R260B** | | ditch | San Pedro | | 0.0020 | | 54 | 66 | 7 | 20 | | | 58 | 84 | 102 | 138 | 44 | 0.20 |
| **MAD260** | | street | | | 0.0050 | | 24 | 24 | | 31 | | | 7 | 7 | 14 | 14 | 6 | 0.03 |
| **C255** | san5 | pipe | San Pedro/Murphy | 42 | 0.0010 | ***40*** | 66 | 78 | | 14 | 62 | 97 | 65 | 90 | 116 | 151 | 50 | 0.23 |
| **R265B** | san2 | pipe | San Pedro | 48 | 0.0010 | ***54*** | 66 | 78 | | 14 | 42 | 69 | 62 | 82 | 110 | 137 | 50 | 0.23 |
| **MAD265** | | ditch | | | 0.0060 | | 42 | 48 | 5 | 34 | | | 15 | 66 | 29 | 102 | 20 | 0.07 |
| **C260** | san3 | pipe | San Pedro/US 101 | 48 | 0.0023 | ***82*** | 66 | 78 | | 21 | 34 | 103 | 75 | 124 | 137 | 206 | 68 | 0.30 |
| **C227** | | MAD | US 101/San Pedro Ave. | | 0.0033 | | | | 13 | | | | 507 | 618 | 965 | 1057 | 610 | 2.86 |
| **R275A** | | MAD | US 101 | | 0.0033 | | | | 13 | | | | 507 | 617 | 964 | 1056 | 610 | 2.86 |
| **MAD270** | | ditch | | | 0.0020 | | 42 | 48 | 5 | 20 | | | 32 | 33 | 62 | 64 | 50 | 0.23 |
| **R275B** | | ditch | Barrett | | 0.0010 | | 42 | 60 | 6 | 14 | | | 32 | 33 | 62 | 64 | 50 | 0.23 |
| **MAD275** | | ditch | | | 0.0040 | | 30 | 36 | 4 | 28 | | | 12 | 21 | 24 | 37 | 20 | 0.08 |
| **C270** | | ditch | Barrett/Condit | | 0.0127 | | 30 | 42 | 4 | 50 | | | 44 | 47 | 86 | 90 | 70 | 0.32 |
| **C265** | | MAD | US 101/Barrett Ave. | | 0.0033 | | | | 14 | | | | 543 | 654 | 1044 | 1136 | 678 | 3.17 |
| **R285A** | | MAD | US 101 | | 0.0033 | | | | 14 | | | | 543 | 653 | 1043 | 1135 | 678 | 3.17 |
| **MAD280** | | ditch | | | 0.0020 | | 36 | 48 | 5 | 20 | | | 27 | 27 | 54 | 54 | 42 | 0.22 |
| **R285B** | | ditch | Tennant | | 0.0010 | | 42 | 54 | 6 | 14 | | | 27 | 27 | 54 | 54 | 42 | 0.22 |
| **MAD285** | | ditch | | | 0.0030 | | 30 | 36 | 4 | 24 | | | 12 | 22 | 24 | 39 | 16 | 0.07 |
| **C280** | | ditch | Tennant Ave | | 0.0030 | | 36 | 48 | 5 | 24 | | | 37 | 36 | 75 | 73 | 60 | 0.29 |
| **C275** | | MAD | US 101/Tennant Ave. | | 0.0033 | | | | 14 | | | | 571 | 677 | 1111 | 1195 | 736 | 3.47 |
| **R295A** | | MAD | US 101 | | 0.0033 | | | | 14 | | | | 571 | 676 | 1110 | 1194 | 736 | 3.47 |
| **MAD290** | | ditch | | | 0.0020 | | 36 | 48 | 5 | 20 | | | 30 | 30 | 58 | 58 | 46 | 0.22 |
| **R295B** | | ditch | Fisher | | 0.0040 | | 36 | 42 | 5 | 28 | | | 30 | 30 | 58 | 58 | 46 | 0.22 |
| **MAD295** | | ditch | | | 0.0040 | | 24 | 30 | 3 | 28 | | | 12 | 12 | 24 | 23 | 16 | 0.07 |
| **C290** | | ditch | Fisher/US 101 | | 0.0030 | | 42 | 54 | 5 | 24 | | | 42 | 41 | 81 | 80 | 62 | 0.29 |
| **C285** | | MAD | US 101 | | 0.0033 | | | | 14 | | | | 608 | 706 | 1188 | 1266 | 794 | 3.76 |
| **R305A** | | MAD | US 101/Fisher Ave. | | 0.0033 | | | | 14 | | | | 608 | 705 | 1188 | 1265 | 794 | 3.76 |
| **MAD300** | | ditch | | | 0.0020 | | 42 | 48 | 5 | 20 | | | 28 | 33 | 55 | 62 | 48 | 0.22 |
| **R305B** | | ditch | Maple | | 0.0020 | | 42 | 48 | 5 | 20 | | | 28 | 33 | 55 | 62 | 48 | 0.22 |
| **MAD305** | | ditch | | | 0.0030 | | 30 | 36 | 4 | 24 | | | 15 | 15 | 27 | 27 | 20 | 0.08 |
| **C300** | | ditch | Maple/US 101 | | 0.0030 | | 42 | 54 | 5 | 24 | | | 42 | 47 | 82 | 89 | 68 | 0.30 |
| **C295** | | MAD | US 101 | | 0.0033 | | | | 14 | | | | 646 | 746 | 1268 | 1350 | 862 | 4.06 |
| **MAD310** | | ditch | | | 0.0050 | | 48 | 54 | 6 | 31 | | | 78 | 78 | 121 | 121 | 40 | 0.15 |
| **C305** | | MAD | US 101/Maple Ave. | | 0.0033 | | | | 15 | | | | 672 | 786 | 1313 | 1412 | 900 | 4.21 |

# Appendix 6 Coyote Creek Capacities and Design Flows
## Storm Drainage Master Plan
## City of Morgan Hill

| HEC1 OPER | PIPE NODE NAME | TYPE | LOCATION | PIPE SIZE (in) | SLOPE | PIPE EXIST CAP (cfs) | PIPE 10-YR FUTURE dia (in) | PIPE 100-YR FUTURE dia (in) | DITCH 100-YR FUTURE width (ft) | STREET CAPACITY 40 ft/.025 (cfs) | 100 YR EXIST EXCESS FLOW >10 (cfs) | 100 YR 2020 EXCESS FLOW >10 (cfs) | 10-YR EXISTING HEC1 (cfs) | 10-YR 2020 HEC-1 (cfs) | 100-YR EXISTING HEC-1 (cfs) | 100-YR 2020 HEC-1 (cfs) | 100 YR VOL 2020 (ac ft) | AREA (sq. mi) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COY5 | | ditch | | | 0.064 | | 30 | 42 | 4 | 111 | | | 99 | 99 | 188 | 188 | 68 | 0.29 |
| COY10 | | ditch | | | 0.087 | | 24 | 36 | 4 | 130 | | | 75 | 75 | 143 | 143 | 48 | 0.22 |
| COY15 | | ditch | | | 0.055 | | 30 | 36 | 4 | 103 | | | 82 | 82 | 151 | 151 | 64 | 0.27 |
| COY20 | | ditch | | | 0.064 | | 30 | 36 | 4 | 111 | | | 91 | 91 | 165 | 165 | 66 | 0.28 |
| COY25 | | ditch | | | 0.067 | | 24 | 36 | 4 | 114 | | | 69 | 69 | 129 | 129 | 68 | 0.28 |
| COY30 | | ditch | | | 0.087 | | 24 | 30 | 3 | 130 | | | 62 | 62 | 112 | 112 | 42 | 0.17 |
| COY40 | | ditch | | | 0.053 | | 24 | 30 | 4 | 101 | | | 54 | 54 | 103 | 103 | 40 | 0.17 |
| COY55 | | ditch | | | 0.066 | | 24 | 30 | 3 | 113 | | | 39 | 39 | 75 | 75 | 42 | 0.17 |
| COY60 | | ditch | | | 0.007 | | 30 | 36 | 4 | 37 | | | 13 | 25 | 28 | 47 | 14 | 0.06 |
| COY65 | | ditch | | | 0.06 | | 24 | 30 | 3 | 108 | | | 15 | 35 | 31 | 66 | 20 | 0.10 |
| R95 | PEE2 | pipe | Peet Road | 36 | 0.005 | 41 | 36 | 42 | | 31 | | | 15 | 35 | 31 | 64 | 20 | 0.10 |
| COY95 | PEE4 | pipe | | 36 | 0.011 | 61 | 18 | 18 | | 46 | | | 7 | 7 | 13 | 13 | 6 | 0.03 |
| C65 | PEE4 | pipe | | 36 | 0.0065 | 47 | 36 | 42 | | 35 | | | 20 | 41 | 41 | 77 | 26 | 0.13 |
| R100 | EAG5 | pipe | | 24 | 0.006 | 15 | 36 | 42 | | 34 | -8 | 26 | 20 | 41 | 41 | 75 | 26 | 0.13 |
| COY100 | EAG5 | pipe | | 48 | 0.0065 | 101 | 18 | 24 | | 35 | | | 6 | 6 | 12 | 12 | 8 | 0.04 |
| C95 | EAG6 | pipe | Eagle View Dr. | 36 | 0.0065 | 47 | 36 | 48 | | 35 | | | 26 | 47 | 52 | 87 | 32 | 0.16 |
| COY105 | EAG3 | pipe | | 27 | 0.0035 | 16 | 18 | 24 | | 26 | | | 7 | 7 | 14 | 14 | 8 | 0.04 |
| C100 | EAG6 | pipe | Eagle View Dr. | 27 | 0.0035 | 16 | 42 | 54 | | 26 | 23 | 59 | 32 | 54 | 65 | 101 | 40 | 0.20 |
| RCC1 | | pipe | | 48 | 0.007 | 104 | 36 | 48 | | 37 | | | 32 | 54 | 65 | 100 | 40 | 0.20 |
| COY70 | | ditch | | | 0.068 | | 18 | 24 | 3 | 115 | | | 33 | 33 | 70 | 70 | 36 | 0.18 |
| COY75 | | ditch | | | 0.068 | | 12 | 18 | 2 | 115 | | | 7 | 8 | 14 | 15 | 6 | 0.04 |
| COY80 | SIL2 | pipe | | 18 | 0.068 | 24 | 6 | 12 | | 115 | | | 3 | 3 | 7 | 7 | 2 | 0.01 |
| COY85 | | ditch | | | 0.095 | | 18 | 24 | 3 | 136 | | | 33 | 33 | 71 | 71 | 34 | 0.17 |
| COY90 | | ditch | | | 0.09 | | 18 | 24 | 3 | 132 | | | 22 | 22 | 47 | 47 | 26 | 0.13 |
| COY110 | | ditch | | | 0.09 | | 24 | 30 | 3 | 132 | | | 26 | 57 | 53 | 96 | 32 | 0.13 |
| COY115 | | ditch | | | 0.09 | | 24 | 30 | 3 | 132 | | | 20 | 74 | 40 | 118 | 30 | 0.10 |
| C105 | | ditch | | | 0.003 | | 60 | 72 | 7 | 24 | | | 46 | 129 | 92 | 211 | 62 | 0.23 |

# Appendix 7 Butterfield Channel Capacities and Design Flows
## Storm Drainage Master Plan
## City of Morgan Hill

| HEC1 OPER | PIPE NODE NAME | TYPE | LOCATION | PIPE SIZE (in) | SLOPE | PIPE EXIST CAP (cfs) | PIPE 10-YR FUTURE dia (in) | PIPE 100-YR FUTURE dia (in) | DITCH 100-YR FUTURE width (ft) | STREET CAPACITY 40 ft/.025 (cfs) | 100 YR EXIST EXCESS FLOW >10 (cfs) | 100 YR 2020 EXCESS FLOW >10 (cfs) | 10-YR EXISTING HEC1 (cfs) | 10-YR 2020 HEC-1 (cfs) | 100-YR EXISTING HEC-1 (cfs) | 100-YR 2020 HEC-1 (cfs) | 100 YR VOL 2020 (ac ft) | AREA (sq. mi) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BUT20** | **BUT16** | pipe | | 72 | 0.002 | ***166*** | 54 | 66 | | 20 | | | 48 | 81 | 82 | 129 | 34 | 0.15 |
| **BUT25** | **BUT51** | pipe | | 18 | 0.001 | ***5*** | 24 | 30 | | 14 | | | 3 | 8 | 6 | 13 | 4 | 0.02 |
| **C20** | **BUT15** | pipe begins | Butterfield Blvd. | | 0.0022 | ***175*** | | | | | | | 51 | 90 | 87 | 142 | 40 | 0.16 |
| **R50** | **SEN20** | pipe | Butterfield Blvd. | 72 | 0.002 | 165 | 54 | 66 | | 20 | | | 49 | 86 | 83 | 134 | 40 | 0.16 |
| **BUT30** | **CEN1** | pipe | | 27 | 0.006 | ***32*** | 24 | 30 | | 34 | | | 19 | 19 | 18 | 24 | 8 | 0.04 |
| **R35** | **CEN3** | pipe | Serene/Central | 36 | 0.0055 | ***35*** | 24 | 30 | | 33 | | | 19 | 19 | 18 | 24 | 8 | 0.04 |
| **BUT35** | **CEN3** | pipe | | 36 | 0.006 | ***35*** | 36 | 36 | | 34 | | | 37 | 37 | 39 | 49 | 14 | 0.06 |
| **C30** | **CEN4** | pipe | Central Ave. | 36 | 0.004 | ***41*** | 42 | 42 | | 28 | | | 49 | 49 | 56 | 65 | 22 | 0.10 |
| **R40** | **CEN5** | pipe | Central Ave. | 36 | 0.0034 | ***57*** | 42 | 48 | | 26 | | | 48 | 48 | 56 | 63 | 22 | 0.10 |
| **BUT40** | **CEN5** | pipe | | 36 | 0.009 | ***57*** | 18 | 18 | | 42 | | | 7 | 8 | 12 | 13 | 4 | 0.01 |
| **C35** | **CEN6** | pipe | Central Ave. | 36 | 0.0098 | ***65*** | 36 | 42 | | 44 | | | 53 | 53 | 64 | 72 | 24 | 0.11 |
| **BUT41** | **CAL3** | pipe | | 24 | 0.005 | ***23*** | 18 | 24 | | 31 | | | 5 | 6 | 9 | 10 | 2 | 0.01 |
| **P41** | **CAL4** | pond | #1 Calle Central | | | | | | | | | | 3 | 3 | 5 | 5 | 2 | 0.01 |
| **C40** | **CEN4** | pipe | Calle Central/Central | 36 | 0.0023 | ***41*** | 48 | 54 | | 21 | 6 | 14 | 56 | 56 | 68 | 76 | 28 | 0.12 |
| **R42** | **CEN7** | pipe | Central Ave. | 42 | 0.0044 | ***76*** | 42 | 48 | | 29 | | | 55 | 56 | 68 | 76 | 28 | 0.12 |
| **BUT42** | **CEN7** | pipe | | 42 | 0.003 | ***76*** | 18 | 18 | | 24 | | | 4 | 4 | 6 | 7 | 2 | 0.01 |
| **C41** | **CEN10** | pipe | Calle Mazatan/Central | 48 | 0.0476 | ***111*** | 24 | 30 | | 96 | | | 58 | 58 | 72 | 81 | 28 | 0.13 |
| **BUT43** | **CEN8** | pipe | Central Ave / Calle Mazatan | 15 | 0.003 | ***5*** | 18 | 24 | | 24 | | | 6 | 7 | 10 | 11 | 2 | 0.01 |
| **P43** | **CEN9** | pond | #2 El Toro School District | | | | | | | | | | 3 | 3 | 3 | 4 | 2 | 0.01 |
| **C42** | **CEN10** | pipe | Calle Mazatan/Central | 48 | 0.0476 | ***111*** | 30 | 30 | | 96 | | | 60 | 60 | 76 | 84 | 32 | 0.14 |
| **R45** | **CEN10** | pipe | Central Ave. | 48 | 0.0024 | ***111*** | 48 | 54 | | 22 | | | 60 | 60 | 75 | 83 | 32 | 0.14 |
| **BUT45** | **CEN10** | pipe | | 48 | 0.006 | ***111*** | 30 | 36 | | 34 | | | 30 | 30 | 19 | 41 | 10 | 0.04 |
| **C25** | **BUT50** | BUT | Butterfield/Central | | 0.0023 | | | | | | | | 75 | 75 | 94 | 110 | 42 | 0.18 |
| **C43** | **BUT28** | BUT | Buttterfield Channel at Central Ave. | | 0.0023 | | | | | | | | 123 | 147 | 169 | 240 | 80 | 0.35 |
| **BUT50** | **SEN20** | pipe | | 72 | 0.004 | 233 | 30 | 36 | | 28 | | | 24 | 28 | 19 | 43 | 10 | 0.04 |
| **C45** | **BUT50** | BUT | Butterfield Channel | | 0.0023 | | | | | | | | 138 | 164 | 187 | 267 | 92 | 0.39 |
| **R80** | **BUT50** | BUT | Butterfield Blvd. | | 0.0023 | | | | | | | | 135 | 159 | 183 | 259 | 92 | 0.39 |
| **BUT55** | | street | Laurel Rd. / Main Ave. | | 0.004 | | 24 | 30 | | 28 | | | 10 | 11 | 14 | 18 | 6 | 0.03 |
| **R60** | **SER20** | street | Serene/Main | | 0.0038 | ***8.5*** | 24 | 30 | | 27 | | | 10 | 10 | 14 | 18 | 6 | 0.03 |
| **BUT60** | **BEN12** | pipe | | 27 | 0.003 | ***15*** | 24 | 30 | | 24 | | | 9 | 9 | 15 | 15 | 4 | 0.02 |
| **P60** | **BEN14** | pond | #3 Walnut Creek Tract 8234 Private | | | | | | | | | | 6 | 6 | 11 | 11 | 4 | 0.02 |
| **R61** | **BEN15** | pipe | Bentle | 27 | 0.0019 | ***17*** | 24 | 24 | | 19 | | | 6 | 6 | 11 | 11 | 4 | 0.02 |
| **BUT61** | **EMA1** | pipe | | 27 | 0.001 | ***24*** | 24 | 30 | | 14 | | | 5 | 5 | 9 | 9 | 4 | 0.01 |
| **C60** | **EMA1** | pipe | Lan Cia | 27 | 0.0076 | ***24*** | 24 | 24 | | 38 | | | 12 | 12 | 19 | 19 | 8 | 0.03 |
| **C55** | **EMA1** | pipe | Lan Cia/Main | 27 | 0.0076 | ***24*** | 24 | 30 | | 38 | | | 21 | 22 | 33 | 38 | 14 | 0.06 |
| **R65** | **EMA2** | pipe | Main | 27 | 0.0032 | ***34*** | 30 | 36 | | 25 | | | 21 | 22 | 33 | 37 | 14 | 0.06 |
| **BUT65** | **EMA2** | pipe | | 30 | 0.005 | ***34*** | 24 | 30 | | 31 | | | 13 | 16 | 23 | 26 | 6 | 0.03 |
| **C61** | **EMA2** | pipe | Main/Grand Prix | 30 | 0.0076 | ***34*** | 30 | 36 | | 38 | | | 30 | 31 | 49 | 53 | 22 | 0.08 |
| **R70** | **EMA5** | pipe | Main | 36 | 0.0035 | ***59*** | 36 | 42 | | 26 | | | 30 | 31 | 49 | 53 | 22 | 0.08 |
| **BUT70** | **EMA6** | pipe | | 21 | 0.003 | ***44*** | 24 | 30 | | 24 | | | 11 | 11 | 17 | 17 | 4 | 0.02 |
| **C65** | **EMA7** | pipe | Main | 36 | 0.0022 | ***49*** | 42 | 48 | | 21 | | | 35 | 37 | 58 | 63 | 26 | 0.10 |
| **R75** | **EMA7** | pipe | Main | 36 | 0.0018 | ***49*** | 42 | 48 | | 19 | | | 35 | 36 | 58 | 62 | 26 | 0.10 |
| **BUT75** | **EMA7** | pipe | | 36 | 0.003 | ***49*** | 24 | 30 | | 24 | | | 10 | 10 | 16 | 16 | 4 | 0.01 |
| **C70** | **EMA7** | pipe | Main/Butterfield | 36 | 0.0022 | ***49*** | 42 | 48 | | 21 | | | 40 | 42 | 66 | 66 | 30 | 0.11 |
| **C50** | **BUT29** | BUT | Main/Butterfield | | 0.0023 | | | | | | | | 174 | 199 | 248 | 328 | 120 | 0.50 |
| **BUT80** | **EMA8** | pipe | | 27 | 0.003 | ***33*** | 24 | 30 | | 24 | | | 4 | 11 | 7 | 16 | 4 | 0.01 |
| **C75** | **BUT29** | BUT | Main/Butterfield | | 0.0023 | | | | | | | | 178 | 204 | 255 | 337 | 124 | 0.51 |
| **R82** | **BUT4** | BUT | Calle Cabelle | | 0.0023 | | | | | | | | 174 | 199 | 252 | 329 | 124 | 0.51 |
| **BUT81** | **BUT31** | pipe | | 24 | 0.004 | 12 | 30 | 36 | | 28 | | | 15 | 23 | 23 | 34 | 6 | 0.02 |
| **C80** | **BUT4** | BUT | Butterfield | | 0.0023 | | | | | | | | 181 | 206 | 263 | 340 | 128 | 0.53 |
| **BUT82** | **CAL19** | pipe | | 18 | 0.001 | ***5*** | 24 | 24 | | 14 | | | 5 | 5 | 5 | 6 | 2 | 0.01 |
| **R84A** | **CAL21** | pipe | Calle Cabelle | 18 | 0.0021 | ***8*** | 18 | 18 | | 20 | | | 5 | 5 | 5 | 6 | 2 | 0.01 |
| **BUT83** | **CAL21** | pipe | | 18 | 0.0021 | ***8*** | 18 | 18 | | 20 | | | 6 | 6 | 5 | 5 | 2 | 0.01 |
| **P83** | **CAL24** | pond | #4 Belle Estate Tract 8485 | | | ***4.13*** | | | | | | | 3 | 3 | 3 | 3 | 2 | 0.01 |
| **C82** | **CAL31** | pipe | Calle Asta/Calle Cabelle | 21 | 0.0051 | ***10*** | 18 | 18 | | 31 | | | 8 | 8 | 8 | 9 | 4 | 0.01 |
| **R84B** | **CAL32** | pipe | Calle Cabeza | 21 | 0.0033 | 8 | 18 | 24 | | 25 | | | 7 | 7 | 8 | 9 | 4 | 0.01 |
| **BUT84** | **CAL40** | pipe | | 24 | 0.004 | ***16*** | 30 | 36 | | 28 | | | 25 | 25 | 40 | 40 | 10 | 0.04 |
| **C83** | **CAL40** | pipe | Butterfield/Calle Cabeza | 24 | 0.0214 | ***16*** | 24 | 30 | | 64 | | | 29 | 29 | 45 | 45 | 14 | 0.06 |
| **C81** | **BUT35** | BUT | Butterfield/Calle Cabeza | | 0.0023 | | | | | | | | 203 | 206 | 297 | 376 | 142 | 0.59 |
| **R150** | **BUT4** | BUT | Butterfield Blvd. | | 0.0023 | | | | | | | | 201 | 223 | 295 | 370 | 142 | 0.59 |
| **BUT85** | **WAL10** | pipe | Laurel Ave / English Walnut V | 18 | 0.004 | ***9*** | 24 | 24 | | 28 | | | 9 | 9 | 14 | 14 | 6 | 0.02 |
| **R90** | **DIA20** | pipe | Walnut Grove | 30 | 0.0024 | ***21*** | 24 | 24 | | 22 | | | 9 | 9 | 13 | 13 | 6 | 0.02 |
| **BUT90** | **DIA20** | pipe | | 30 | 0.003 | ***21*** | 30 | 36 | | 24 | | | 21 | 21 | 34 | 34 | 10 | 0.04 |
| **C85** | **DIA20** | pipe | Diana | 30 | 0.0039 | ***21*** | 30 | 36 | | 27 | | | 27 | 27 | 43 | 43 | 16 | 0.06 |
| **P90** | **DIA21** | pond | #5 Diana Estates Tract 8359 Private | | | | | | | | | | 16 | 16 | 24 | 24 | 16 | 0.06 |
| **BUT100** | **SER25** | pipe | | 24 | 0.001 | ***34*** | 30 | 36 | | 14 | | | 9 | 9 | 15 | 15 | 6 | 0.03 |
| **R105** | **DIA22** | pipe | Serene | 36 | 0.0035 | 34 | 24 | 24 | | 26 | | | 9 | 9 | 15 | 15 | 6 | 0.03 |
| **BUT105** | **DIA22** | pipe | | 36 | 0.003 | 32 | 24 | 24 | | 24 | | | 9 | 9 | 13 | 13 | 4 | 0.02 |
| **C100** | **DIA22** | pipe | Serene | 36 | 0.004 | 37 | 24 | 30 | | 28 | | | 16 | 16 | 25 | 25 | 10 | 0.05 |
| **C90** | **DIA22** | pipe | Serene/Diana | 36 | 0.004 | 37 | 30 | 36 | | 28 | | | 29 | 29 | 44 | 44 | 24 | 0.11 |
| **BUT110** | **ANI2** | pipe | | 21 | 0.004 | ***12*** | 24 | 30 | | 28 | | | 10 | 10 | 18 | 18 | 4 | 0.02 |
| **C105** | **DIA22** | pipe | James Lex/Diana | 36 | 0.0032 | 33 | 36 | 42 | | 25 | | | 38 | 38 | 59 | 59 | 30 | 0.13 |
| **R125** | **DIA23** | pipe | Diana | 36 | 0.0032 | ***32*** | 36 | 42 | | 25 | | | 37 | 37 | 57 | 57 | 30 | 0.13 |
| **BUT115** | **LOT1** | street | lotus wy. | | 0.003 | ***8.44*** | 12 | 18 | | 24 | | | 2 | 3 | 4 | 6 | 2 | 0.01 |
| **C110** | **DIA24** | pipe | Lotus Wy. | 36 | 0.0032 | ***34*** | 36 | 48 | | 25 | | | 39 | 39 | 61 | 62 | 32 | 0.14 |
| **BUT120** | | street | Diana Ave. | | 0.003 | | 24 | 30 | | 24 | | | 12 | 12 | 11 | 20 | 6 | 0.02 |
| **C115** | **GRA6** | pipe | Diana/Rosemary | 36 | 0.0032 | ***39*** | 42 | 48 | | 25 | 7 | 16 | 51 | 51 | 71 | 80 | 38 | 0.16 |
| **BUT125** | **GRA6** | pipe | | 36 | 0.003 | ***39*** | 18 | 18 | | 24 | | | 5 | 5 | 7 | 7 | 2 | 0.00 |
| **C120** | **GRA6** | pipe | Diana/Rosemary | 36 | 0.003 | ***39*** | 42 | 54 | | 24 | 12 | 23 | 55 | 55 | 75 | 86 | 38 | 0.17 |
| **BUT130** | **STJ3** | pipe | | 15 | 0.004 | ***4*** | 18 | 24 | | 28 | | | 7 | 7 | 12 | 12 | 4 | 0.01 |
| **P130** | **STJ3** | pond | #6 St. Joseph Drive | | | ***3.8*** | | | | | | | 5 | 5 | 7 | 7 | 4 | 0.01 |
| **C125** | **DIA25** | pipe | Joseph/Diana | 36 | 0.0031 | ***40*** | 48 | 54 | | 24 | 18 | 28 | 59 | 59 | 82 | 92 | 42 | 0.18 |
| **R135** | **DIA26** | pipe | Diana | 36 | 0.0038 | ***71*** | 42 | 54 | | 27 | | | 58 | 58 | 81 | 91 | 42 | 0.18 |
| **BUT135** | **DIA26** | pipe | | 36 | 0.003 | ***71*** | 24 | 24 | | 24 | | | 8 | 8 | 12 | 12 | 2 | 0.01 |
| **C130** | **DIA27** | pipe | Diana | 42 | 0.0031 | ***71*** | 48 | 54 | | 24 | | | 62 | 62 | 86 | 96 | 44 | 0.19 |
| **BUT137** | **CAR10** | pipe | | 18 | 0.006 | ***8*** | 24 | 24 | | 34 | | | 12 | 12 | 18 | 18 | 4 | 0.01 |
| **BUT138** | **MON23** | pipe | Montoya Cir. | 18 | 0.003 | ***5*** | 18 | 24 | | 24 | | | 5 | 5 | 9 | 9 | 2 | 0.01 |
| **P138** | **MON24** | pond | #7 Woodcrest Estates | | | | | | | | | | 3 | 3 | 4 | 4 | 2 | 0.01 |
| **C137** | **MON26** | pipe | Bel Air/Montoya | 24 | 0.0067 | ***12*** | 24 | 24 | | 36 | | | 14 | 14 | 21 | 21 | 6 | 0.02 |
| **R139** | **GRA1** | pipe | Bel Air | 27 | 0.0052 | ***22*** | 24 | 30 | | 32 | | | 13 | 13 | 20 | 20 | 6 | 0.02 |
| **BUT139** | **GRA1** | pipe | Bel Air / Grand Prix | 27 | 0.003 | ***22*** | 24 | 30 | | 24 | | | 9 | 9 | 15 | 15 | 4 | 0.02 |
| **C138** | **GRA1** | pipe | Grand Prix | 27 | 0.0044 | ***22*** | 30 | 36 | | 29 | | | 22 | 22 | 35 | 35 | 12 | 0.04 |
| **R140** | **CAL29** | pipe | Grand Prix | 36 | 0.0029 | ***43*** | 30 | 36 | | 24 | | | 20 | 20 | 31 | 31 | 12 | 0.04 |
| **BUT140** | **CAL29** | pipe | | 36 | 0.002 | ***43*** | 30 | 36 | | 20 | | | 19 | 19 | 32 | 32 | 10 | 0.04 |
| **C139** | **CAL29** | pipe | Calle Mazatan | 36 | 0.0037 | ***43*** | 36 | 42 | | 27 | | | 38 | 38 | 62 | 62 | 20 | 0.08 |
| **C135** | **DIA27** | pipe | Creekside/Diana | 42 | 0.0047 | ***71*** | 48 | 60 | | 30 | 45 | 56 | 98 | 98 | 146 | 157 | 64 | 0.27 |
| **R146** | **DIA28** | pipe | Diana | 48 | 0.0026 | ***101*** | 54 | 66 | | 22 | 21 | 31 | 97 | 97 | 144 | 154 | 64 | 0.27 |
| **BUT146** | **DIA27** | pipe | Marcross / Diana | 15 | 0.002 | ***71*** | 18 | 24 | | 20 | | | 5 | 5 | 8 | 8 | 2 | 0.01 |
| **C140** | **DIA28** | pipe | Markcross/Diana | 48 | 0.0026 | ***101*** | 54 | 66 | | 22 | 27 | 38 | 100 | 100 | 150 | 161 | 68 | 0.28 |
| **BUT148** | | street | Diana/Butterfield | | 0.001 | | 24 | 30 | | 14 | | | 4 | 5 | 7 | 9 | 2 | 0.01 |
| **C146** | **DIA28** | pipe | Diana/Butterfield | 48 | 0.0026 | ***101*** | 60 | 72 | | 22 | 34 | 45 | 104 | 104 | 157 | 168 | 70 | 0.29 |
| **C84** | **BUT4** | BUT | Butterfield/Diana Ave. | | 0.0023 | | | | | | | | 290 | 312 | 433 | 520 | 212 | 0.88 |
| **BUT150** | | street | Butterfield Blvd. | | 0.003 | | 36 | 48 | | 24 | | | 21 | 38 | 35 | 60 | 12 | 0.05 |
| **C148** | **BUT4** | BUT | Butterfield/Diana Ave. | | 0.0023 | | | | | | | | 303 | 328 | 455 | 546 | 224 | 0.93 |
| **R152** | **EDU44** | BUT | Butterfield Blvd. | | 0.0023 | | | | | | | | 301 | 326 | 454 | 543 | 224 | 0.93 |
| **BUT152** | **EDU45** | pipe | | 33 | 0.003 | 25 | 30 | 36 | | 24 | | | 7 | 21 | 12 | 32 | 6 | 0.02 |
| **C150** | **EDU44** | BUT | E. Dunne/Butterfield | | 0.0023 | | | | | | | | 307 | 333 | 465 | 553 | 230 | 0.95 |
| **BUT155** | | street | Creekview/Rock | | 0.003 | | 30 | 36 | | 24 | | | 18 | 18 | 28 | 28 | 6 | 0.02 |
| **P155** | **DIA29** | pond | #8 Creekside | | | | | | | | | | 2 | 2 | 5 | 5 | 2 | 0.02 |
| **C152** | **BUT41** | BUT | Pebble Cr./Butterfield/East Dunne | | 0.0023 | | | | | | | | 307 | 333 | 465 | 553 | 232 | 0.97 |
| **BUT160** | **LAU4** | pipe | Laurel Rd. | 24 | 0.004 | 12 | 24 | 30 | | 28 | | | 13 | 13 | 20 | 21 | 4 | 0.02 |
| **P160** | **LAU5** | pond | #9 Lyon's 58260 | | | | | | | | | | 8 | 8 | 10 | 10 | 4 | 0.02 |
| **R161** | **EDU41** | pipe | Laurel Rd. | 36 | 0.0038 | 36 | 18 | 24 | | 27 | | | 8 | 8 | 10 | 10 | 4 | 0.02 |
| **BUT161** | **EDU41** | pipe | | 36 | 0.004 | 37 | 30 | 36 | | 28 | | | 11 | 20 | 19 | 31 | 6 | 0.02 |
| **C160** | **EDU41** | pipe | Walnut Grove/E. Dunne | 36 | 0.0037 | 35 | 30 | 36 | | 27 | | | 17 | 26 | 27 | 39 | 12 | 0.04 |
| **BUT165** | | ditch | | | 0.004 | | 18 | 18 | 2 | 28 | | | 5 | 5 | 8 | 8 | 2 | 0.01 |
| **R170A** | | ditch | | | 0.0043 | | 18 | 18 | 2 | 29 | | | 4 | 4 | 8 | 8 | 2 | 0.01 |
| **C161** | **EDU42** | future system | | | 0.0043 | | | | | | | | 21 | 29 | 33 | 44 | 14 | 0.05 |
| **R170B** | | future system | | | 0.0021 | | | | | | | | 20 | 25 | 30 | 36 | 14 | 0.05 |
| **BUT170** | **EDU43** | pipe | | 36 | 0.003 | 32 | 30 | 36 | | 24 | | | 20 | 23 | 19 | 36 | 8 | 0.04 |
| **C165** | **EDU43** | pipe | E. Dunne/Butterfield | 36 | 0.0076 | 51 | 36 | 42 | | 38 | | | 34 | 42 | 49 | 67 | 22 | 0.09 |
| **C155** | **EDU44** | BUT | E. Dunne/Butterfield | | 0.0023 | | | | | | | | 336 | 365 | 511 | 604 | 254 | 1.06 |
| **R185** | | BUT | Butterfield | | 0.0023 | | | | | | | | 332 | 360 | 507 | 596 | 254 | 1.06 |

# Appendix 7 Butterfield Channel Capacities and Design Flows
## Storm Drainage Master Plan
## City of Morgan Hill

| HEC1 OPER | PIPE NODE NAME | TYPE | LOCATION | PIPE SIZE (in) | SLOPE | PIPE EXIST CAP (cfs) | PIPE 10-YR FUTURE dia (in) | PIPE 100-YR FUTURE dia (in) | DITCH 100-YR FUTURE width (ft) | STREET CAPACITY 40 ft/.025 (cfs) | 100 YR EXIST EXCESS FLOW >10 (cfs) | 100 YR 2020 EXCESS FLOW >10 (cfs) | 10-YR EXISTING HEC1 (cfs) | 10-YR 2020 HEC-1 (cfs) | 100-YR EXISTING HEC-1 (cfs) | 100-YR 2020 HEC-1 (cfs) | 100 YR VOL 2020 (ac ft) | AREA (sq. mi) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BUT175** | **COR10** | pipe | | 33 | 0.003 | 25 | 30 | 36 | | 24 | | | 1 | 19 | 12 | 30 | 6 | 0.03 |
| **R178** | **COR11** | pipe | Cory | 33 | 0.0025 | 23 | 30 | 36 | | 22 | | | 14 | 18 | 12 | 28 | 6 | 0.03 |
| **BUT178** | **COR11** | pipe | | 15 | 0.001 | 2 | 18 | 24 | | 14 | | | 4 | 4 | 6 | 6 | 2 | 0.01 |
| **C175** | **BUT2** | pipe | San Juan/Cory | 33 | 0.0111 | ***3*** | 24 | 30 | | 46 | | | 17 | 21 | 15 | 33 | 8 | 0.03 |
| **R180** | **BUT2** | pipe | San Juan | 33 | 0.0044 | ***3*** | 30 | 36 | | 29 | | | 17 | 21 | 15 | 33 | 8 | 0.03 |
| **BUT180** | **BUT2** | street | San Juan/butterfield | | 0.003 | ***2.5*** | 30 | 36 | | 24 | | | 16 | 19 | 14 | 31 | 6 | 0.02 |
| **C170** | **EDU43** | pipe | East Dunne Ave. | 36 | 0.0023 | 28 | 42 | 48 | | 21 | | | 30 | 37 | 29 | 58 | 14 | 0.06 |
| **C178** | **SAN17** | BUT | Butterfield/San Pedro | | 0.0023 | | | | | | | | 348 | 377 | 536 | 625 | 268 | 1.12 |
| **BUT185** | **SAN18** | pipe | Butterfield | 30 | 0.002 | 16 | 36 | 42 | | 20 | | | 25 | 29 | 33 | 46 | 10 | 0.04 |
| **C180** | **SAN17** | BUT | Butterfield/San Pedro | | 0.0023 | | | | | | | | 361 | 391 | 555 | 647 | 280 | 1.16 |
| **R235A** | | BUT | Butterfield Blvd. | | 0.0023 | | | | | | | | 359 | 389 | 553 | 644 | 280 | 1.16 |
| **BUT190** | **WAL5** | pipe | | 30 | 0.002 | 16 | 36 | 42 | | 20 | | | 31 | 31 | 46 | 46 | 8 | 0.03 |
| **P190** | **WAL6** | pond | #10 DBO Private | | | | | | | | | | 12 | 12 | 16 | 16 | 8 | 0.03 |
| **R195** | **SAN12** | pipe | San Ramon | 24 | 0.0029 | 11 | 24 | 30 | | 24 | | | 12 | 12 | 16 | 16 | 8 | 0.03 |
| **BUT195** | **SAN12** | pipe | | 24 | 0.003 | 11 | 30 | 36 | | 24 | | | 19 | 20 | 14 | 31 | 8 | 0.03 |
| **C190** | **SAN12** | pipe | San Ramon/San Pedro | 24 | 0.0025 | 10 | 36 | 42 | | 22 | | | 28 | 29 | 30 | 42 | 16 | 0.06 |
| **BUT200** | **SAN13** | pipe | | 13.5 | 0.003 | 2 | 24 | 30 | | 24 | | | 10 | 10 | 16 | 16 | 4 | 0.01 |
| **P200** | **RIT3** | pond | #11 Cottage Green Private | | | | | | | | | | 4 | 4 | 6 | 6 | 4 | 0.01 |
| **C195** | **SAN14** | pipe | San Ramon/San Pedro | 48 | 0.0023 | 60 | 36 | 42 | | 21 | | | 32 | 32 | 37 | 48 | 18 | 0.08 |
| **R205A** | **SAN14** | pipe | San Pedro Ave. | 48 | 0.0023 | 60 | 36 | 42 | | 21 | | | 30 | 30 | 36 | 44 | 18 | 0.08 |
| **BUT202** | **JOL1** | pipe | Joleen | 21 | 0.003 | 8 | 24 | 24 | | 24 | | | 9 | 9 | 14 | 14 | 4 | 0.01 |
| **R205B** | **JOL2** | pipe | Joleen | 24 | 0.0037 | 12 | 18 | 24 | | 27 | | | 8 | 8 | 13 | 13 | 4 | 0.01 |
| **BUT205** | **JOL2** | pipe | | 24 | 0.004 | 12 | 24 | 24 | | 28 | | | 10 | 10 | 16 | 16 | 4 | 0.02 |
| **C202** | **JOL2** | pipe | San Pedro Ln. | 24 | 0.0056 | 15 | 24 | 30 | | 33 | | | 16 | 16 | 26 | 26 | 8 | 0.03 |
| **C200** | **SAN15** | pipe | San Pedro Ave. | 48 | 0.0017 | 51 | 48 | 54 | | 18 | | | 46 | 47 | 54 | 70 | 26 | 0.11 |
| **R215** | **SAN15** | pipe | San Pedro Ave. | 48 | 0.0017 | 51 | 48 | 54 | | 18 | | | 44 | 44 | 53 | 66 | 26 | 0.11 |
| **BUT210** | | street | Windmill/pine | | 0.002 | | 24 | 30 | | 20 | | | 8 | 8 | 13 | 13 | 4 | 0.01 |
| **C205** | **SAN15** | street | San Pedro/Windmill | | 0.0017 | | 48 | 54 | | 18 | | | 51 | 52 | 64 | 78 | 30 | 0.13 |
| **BUT215** | **SAN15** | pipe | | 48 | 0.002 | 56 | 18 | 24 | | 20 | | | 6 | 6 | 10 | 10 | 2 | 0.01 |
| **C210** | **SAN16** | pipe | San Pedro/San Tomas | 48 | 0.0056 | 93 | 42 | 48 | | 33 | | | 55 | 55 | 69 | 84 | 32 | 0.13 |
| **BUT220** | **SAN16** | pipe | | 15 | 0.004 | 4 | 18 | 24 | | 28 | | | 7 | 7 | 11 | 11 | 2 | 0.01 |
| **C215** | **SAN16** | pipe | San Pedro/Cory | 48 | 0.0041 | 80 | 42 | 48 | | 28 | | | 59 | 60 | 78 | 93 | 34 | 0.14 |
| **R225** | **COR1** | pipe | Cory | 48 | 0.0041 | 80 | 42 | 48 | | 28 | | | 59 | 60 | 78 | 92 | 34 | 0.14 |
| **BUT225** | **COR1** | pipe | Cory | 48 | 0.005 | 88 | 18 | 18 | | 31 | | | 5 | 5 | 8 | 8 | 2 | 0.01 |
| **C220** | **COR1** | pipe | Butterfield Ch. | 48 | 0.0193 | 173 | 30 | 36 | | 61 | | | 63 | 63 | 84 | 98 | 36 | 0.15 |
| **C185** | **COR2** | BUT | Butterfield Ch. | | 0.0023 | | | | | | | | 402 | 434 | 618 | 715 | 314 | 1.31 |
| **R235** | **SAN26** | BUT | Buttterfield Ch. | | 0.0023 | | | | | | | | 399 | 431 | 615 | 709 | 314 | 1.31 |
| **BUT230** | **SAN25** | pipe | | 18 | 0.002 | 4 | 24 | 30 | | 20 | | | 9 | 9 | 14 | 14 | 4 | 0.01 |
| **C225** | **SAN26** | BUT | Butterfield Ch./San Benito Ave. | | 0.0023 | | | | | | | | 403 | 435 | 621 | 716 | 318 | 1.32 |
| **BUT235** | | street | | | 0.001 | | 48 | 60 | | 14 | | | 41 | 44 | 39 | 71 | 22 | 0.08 |
| **C230** | **BAR13** | BUT | Butterfield/Barrett | | 0.0023 | | | | | | | | 424 | 458 | 655 | 756 | 338 | 1.41 |
| **BUT240** | | street | | | 0.002 | | 30 | 36 | | 20 | | | 18 | 18 | 17 | 24 | 8 | 0.03 |
| **C235** | **BAR13** | BUT | Butterfield/Barrett | | 0.0023 | | | | | | | | 433 | 466 | 672 | 771 | 346 | 1.44 |
| **BUT245** | | street | Barrett | | 0.004 | | 24 | 30 | | 28 | | | 6 | 12 | 12 | 20 | 8 | 0.04 |
| **BUT250** | **BAR14** | pipe | | 36 | 0.004 | 37 | 18 | 24 | | 28 | | | 8 | 8 | 8 | 11 | 4 | 0.02 |
| **C245** | **BAR14** | pipe | Barrett/Juan Hernandez | 36 | 0.004 | 37 | 30 | 36 | | 28 | | | 13 | 17 | 19 | 30 | 12 | 0.06 |
| **R255** | **BAR16** | pipe | Barrett | 36 | 0.0056 | 43 | 24 | 30 | | 33 | | | 13 | 17 | 19 | 30 | 12 | 0.06 |
| **BUT255** | **SAN37** | pipe | | 30 | 0.004 | 23 | 24 | 30 | | 28 | | | 12 | 12 | 20 | 20 | 6 | 0.03 |
| **C250** | **BAR16** | pipe | Barrett | 36 | 0.0065 | 47 | 30 | 36 | | 35 | | | 24 | 27 | 36 | 47 | 18 | 0.09 |
| **C240** | **BAR13** | BUT | Butterfield/Barrett | | 0.0023 | | | | | | | | 447 | 483 | 700 | 802 | 364 | 1.53 |
| **R295A** | **SAI5** | BUT | Butterfield Ch. | | 0.0023 | | | | | | | | 445 | 480 | 697 | 797 | 364 | 1.53 |
| **BUT260** | **SAI2** | pipe | | 24 | 0.003 | 11 | 24 | 24 | | 24 | | | 8 | 8 | 13 | 13 | 2 | 0.01 |
| **R265** | **SAI4** | pipe | St. Lawrence | 36 | 0.0041 | 37 | 18 | 24 | | 28 | | | 8 | 8 | 13 | 13 | 2 | 0.01 |
| **BUT265** | | street | Butterfield Ch. | | 0.003 | | 18 | 24 | | 24 | | | 7 | 7 | 6 | 10 | 2 | 0.01 |
| **C260** | **SAI4** | pipe | Butterfield Ch. | 36 | 0.0041 | 37 | 24 | 30 | | 28 | | | 15 | 15 | 18 | 23 | 6 | 0.02 |
| **C255** | **SAI5** | BUT | Butterfield Ch. | | 0.0023 | | | | | | | | 450 | 485 | 707 | 806 | 370 | 1.55 |
| **BUT270** | **MED1** | pipe | | 27 | 0.004 | 17 | 24 | 24 | | 28 | | | 15 | 15 | 11 | 15 | 6 | 0.03 |
| **R275** | **MED2** | pipe | Medical Center | 36 | 0.002 | 26 | 24 | 30 | | 20 | | | 1 | 8 | 11 | 13 | 6 | 0.03 |
| **BUT275** | **MED2** | pipe | | 36 | 0.002 | 26 | 36 | 42 | | 20 | | | 21 | 27 | 16 | 41 | 8 | 0.04 |
| **C270** | **MED2** | pipe | Tennant/Medical Center | 36 | 0.0051 | 41 | 36 | 42 | | 31 | | | 33 | 33 | 26 | 52 | 14 | 0.06 |
| **R280** | **TEN4** | pipe | Tennant | 36 | 0.0025 | 29 | 36 | 42 | | 22 | | | 32 | 32 | 26 | 50 | 14 | 0.06 |
| **BUT280** | **TEN4** | pipe | Tennant | 36 | 0.004 | 37 | 30 | 36 | | 28 | | | 16 | 22 | 11 | 35 | 6 | 0.03 |
| **C275** | **TEN4** | pipe | Butterfield/Tennant | 36 | 0.0042 | 38 | 42 | 48 | | 29 | -30 | 15 | 45 | 52 | 36 | 81 | 20 | 0.09 |
| **C265** | **TEN1** | BUT | Butterfield Ch./Tennant Ave. | | 0.0023 | | | | | | | | 470 | 505 | 743 | 841 | 388 | 1.64 |
| **BUT285** | **JAC3** | pipe | | 24 | 0.003 | 11 | 30 | 36 | | 24 | | | 20 | 20 | 25 | 32 | 6 | 0.03 |
| **R290** | | ditch | Railroad | | 0.0006 | | 36 | 42 | 4 | 11 | | | 12 | 13 | 17 | 21 | 6 | 0.03 |
| **BUT290** | **TEN9** | pipe | | 36 | 0.001 | 18 | 30 | 36 | | 14 | | | 5 | 13 | 11 | 21 | 6 | 0.02 |
| **C285** | **TEN9** | pipe | Tennant | 36 | 0.0095 | 56 | 24 | 30 | | 43 | | | 16 | 25 | 24 | 41 | 12 | 0.05 |
| **BUT295** | **TEN6** | pipe | Caputo | 18 | 0.002 | 4 | 30 | 36 | | 20 | | | 19 | 19 | 30 | 30 | 8 | 0.03 |
| **P295** | **TEN8** | pond | #12 Tennant Ave. Private | | | | | | | | | | 8 | 8 | 11 | 11 | 8 | 0.03 |
| **C290** | **TEN5** | pipe | Tennant | 36 | 0.0028 | 31 | 36 | 42 | | 23 | | | 22 | 31 | 35 | 49 | 20 | 0.08 |
| **R295** | **TEN5** | pipe | Tennant | 36 | 0.0005 | 13 | 48 | 54 | | 10 | 10 | 21 | 21 | 28 | 33 | 44 | 20 | 0.08 |
| **C280** | **TEN1** | BUT | Butterfield Ch./Tennant Ave. | | 0.0023 | | | | | | | | 491 | 526 | 776 | 875 | 408 | 1.72 |
| **R300** | | BUT | Butterfield Ch. | | 0.0023 | | | | | | | | 488 | 524 | 772 | 870 | 408 | 1.72 |
| **BUT300** | | ditch | | | 0.002 | | 60 | 72 | 7 | 20 | | | 6 | 112 | 104 | 169 | 38 | 0.14 |
| **C295** | | BUT | Butterfield Ch./Fisher | | 0.0023 | | | | | | | | 516 | 562 | 819 | 933 | 446 | 1.87 |
| **R305** | | BUT | Butterfield Ch. | | 0.0023 | | | | | | | | 525 | 559 | 816 | 928 | 446 | 1.87 |
| **BUT305** | | ditch | | | 0.001 | | 54 | 60 | 6 | 14 | | | 62 | 62 | 63 | 63 | 38 | 0.16 |
| **C300** | | BUT | Butterfield/Railroad/Maple | | 0.0023 | | | | | | | | 557 | 590 | 878 | 988 | 484 | 2.03 |