

## Autobound EDGE - Compactness Report

Plan Name: State Senate:051524\_SD\_RAS\_v1

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### Compactness measure: Polsby-Popper

| District | District Area (SQM) | Perimeter (Miles) | Area of Circle with Same Perimeter | Perimeter of Circle with Same Area | Compactness Value |
|----------|---------------------|-------------------|------------------------------------|------------------------------------|-------------------|
| 1        | 70                  | 56                | 252                                | 30                                 | 0.28              |
| 2        | 60                  | 42                | 139                                | 28                                 | 0.44              |
| 3        | 53                  | 48                | 184                                | 26                                 | 0.29              |
| 4        | 253                 | 81                | 522                                | 56                                 | 0.48              |
| 5        | 112                 | 59                | 276                                | 37                                 | 0.41              |
| 6        | 79                  | 44                | 155                                | 32                                 | 0.51              |
| 7        | 96                  | 52                | 219                                | 35                                 | 0.44              |
| 8        | 52                  | 33                | 89                                 | 25                                 | 0.58              |
| 9        | 114                 | 57                | 257                                | 38                                 | 0.44              |
| 10       | 61                  | 43                | 150                                | 28                                 | 0.40              |
| 11       | 62                  | 47                | 176                                | 28                                 | 0.35              |
| 12       | 309                 | 92                | 667                                | 62                                 | 0.46              |
| 13       | 112                 | 62                | 303                                | 38                                 | 0.37              |
| 14       | 966                 | 165               | 2,158                              | 110                                | 0.45              |
| 15       | 406                 | 122               | 1,186                              | 71                                 | 0.34              |
| 16       | 1,797               | 223               | 3,954                              | 150                                | 0.45              |
| 17       | 3,507               | 419               | 13,972                             | 210                                | 0.25              |
| 18       | 1,589               | 244               | 4,740                              | 141                                | 0.34              |
| 19       | 543                 | 108               | 924                                | 83                                 | 0.59              |
| 20       | 1,890               | 318               | 8,068                              | 154                                | 0.23              |
| 21       | 887                 | 134               | 1,426                              | 106                                | 0.62              |
| 22       | 874                 | 133               | 1,416                              | 105                                | 0.62              |
| 23       | 309                 | 93                | 682                                | 62                                 | 0.45              |
| 24       | 544                 | 124               | 1,215                              | 83                                 | 0.45              |
| 25       | 5,020               | 353               | 9,893                              | 251                                | 0.51              |
| 26       | 1,701               | 269               | 5,763                              | 146                                | 0.30              |
| 27       | 288                 | 84                | 555                                | 60                                 | 0.52              |
| 28       | 1,119               | 169               | 2,266                              | 119                                | 0.49              |
| 29       | 77                  | 41                | 133                                | 31                                 | 0.58              |
| 30       | 360                 | 112               | 994                                | 67                                 | 0.36              |
| 31       | 2,499               | 227               | 4,100                              | 177                                | 0.61              |
| 32       | 5,788               | 347               | 9,573                              | 270                                | 0.60              |
| 33       | 2,924               | 333               | 8,827                              | 192                                | 0.33              |
| 34       | 4,334               | 354               | 9,974                              | 233                                | 0.43              |
| 35       | 767                 | 137               | 1,502                              | 98                                 | 0.51              |
| 36       | 14,061              | 615               | 30,128                             | 420                                | 0.47              |
| 37       | 9,836               | 613               | 29,891                             | 352                                | 0.33              |
| 38       | 33,196              | 943               | 70,771                             | 646                                | 0.47              |

**Most Compact: 0.62 For District: 22**

**Least Compact: 0.23 For District: 20**

### Compactness measure: Schwartzberg

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| District | District Area (SQM) | Perimeter (Miles) | Area of Circle with Same Perimeter | Perimeter of Circle with Same Area | Compactness Value |
|----------|---------------------|-------------------|------------------------------------|------------------------------------|-------------------|
| 1        | 70                  | 56                | 252                                | 30                                 | 0.53              |
| 2        | 60                  | 42                | 139                                | 28                                 | 0.66              |
| 3        | 53                  | 48                | 184                                | 26                                 | 0.54              |
| 4        | 253                 | 81                | 522                                | 56                                 | 0.70              |
| 5        | 112                 | 59                | 276                                | 37                                 | 0.64              |
| 6        | 79                  | 44                | 155                                | 32                                 | 0.71              |
| 7        | 96                  | 52                | 219                                | 35                                 | 0.66              |
| 8        | 52                  | 33                | 89                                 | 25                                 | 0.76              |
| 9        | 114                 | 57                | 257                                | 38                                 | 0.67              |
| 10       | 61                  | 43                | 150                                | 28                                 | 0.64              |
| 11       | 62                  | 47                | 176                                | 28                                 | 0.59              |
| 12       | 309                 | 92                | 667                                | 62                                 | 0.68              |
| 13       | 112                 | 62                | 303                                | 38                                 | 0.61              |
| 14       | 966                 | 165               | 2,158                              | 110                                | 0.67              |
| 15       | 406                 | 122               | 1,186                              | 71                                 | 0.59              |
| 16       | 1,797               | 223               | 3,954                              | 150                                | 0.67              |
| 17       | 3,507               | 419               | 13,972                             | 210                                | 0.50              |
| 18       | 1,589               | 244               | 4,740                              | 141                                | 0.58              |
| 19       | 543                 | 108               | 924                                | 83                                 | 0.77              |
| 20       | 1,890               | 318               | 8,068                              | 154                                | 0.48              |
| 21       | 887                 | 134               | 1,426                              | 106                                | 0.79              |
| 22       | 874                 | 133               | 1,416                              | 105                                | 0.79              |
| 23       | 309                 | 93                | 682                                | 62                                 | 0.67              |
| 24       | 544                 | 124               | 1,215                              | 83                                 | 0.67              |
| 25       | 5,020               | 353               | 9,893                              | 251                                | 0.71              |
| 26       | 1,701               | 269               | 5,763                              | 146                                | 0.54              |
| 27       | 288                 | 84                | 555                                | 60                                 | 0.72              |
| 28       | 1,119               | 169               | 2,266                              | 119                                | 0.70              |
| 29       | 77                  | 41                | 133                                | 31                                 | 0.76              |
| 30       | 360                 | 112               | 994                                | 67                                 | 0.60              |
| 31       | 2,499               | 227               | 4,100                              | 177                                | 0.78              |
| 32       | 5,788               | 347               | 9,573                              | 270                                | 0.78              |
| 33       | 2,924               | 333               | 8,827                              | 192                                | 0.58              |
| 34       | 4,334               | 354               | 9,974                              | 233                                | 0.66              |
| 35       | 767                 | 137               | 1,502                              | 98                                 | 0.71              |
| 36       | 14,061              | 615               | 30,128                             | 420                                | 0.68              |
| 37       | 9,836               | 613               | 29,891                             | 352                                | 0.57              |
| 38       | 33,196              | 943               | 70,771                             | 646                                | 0.68              |

**Most Compact: 0.79 For District: 22**

**Least Compact: 0.48 For District: 20**

## Compactness measure: Reock Score

| District | District Area (SQM) | Perimeter (Miles) | Area of Circle with Same Perimeter | Perimeter of Circle with Same Area | Compactness Value |
|----------|---------------------|-------------------|------------------------------------|------------------------------------|-------------------|
|----------|---------------------|-------------------|------------------------------------|------------------------------------|-------------------|

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|    |        |     |        |     |      |
|----|--------|-----|--------|-----|------|
| 1  | 70     | 56  | 252    | 30  | 0.28 |
| 2  | 60     | 42  | 139    | 28  | 0.53 |
| 3  | 53     | 48  | 184    | 26  | 0.36 |
| 4  | 253    | 81  | 522    | 56  | 0.47 |
| 5  | 112    | 59  | 276    | 37  | 0.36 |
| 6  | 79     | 44  | 155    | 32  | 0.43 |
| 7  | 96     | 52  | 219    | 35  | 0.47 |
| 8  | 52     | 33  | 89     | 25  | 0.62 |
| 9  | 114    | 57  | 257    | 38  | 0.34 |
| 10 | 61     | 43  | 150    | 28  | 0.43 |
| 11 | 62     | 47  | 176    | 28  | 0.41 |
| 12 | 309    | 92  | 667    | 62  | 0.43 |
| 13 | 112    | 62  | 303    | 38  | 0.41 |
| 14 | 966    | 165 | 2,158  | 110 | 0.35 |
| 15 | 406    | 122 | 1,186  | 71  | 0.41 |
| 16 | 1,797  | 223 | 3,954  | 150 | 0.32 |
| 17 | 3,507  | 419 | 13,972 | 210 | 0.22 |
| 18 | 1,589  | 244 | 4,740  | 141 | 0.41 |
| 19 | 543    | 108 | 924    | 83  | 0.57 |
| 20 | 1,890  | 318 | 8,068  | 154 | 0.30 |
| 21 | 887    | 134 | 1,426  | 106 | 0.49 |
| 22 | 874    | 133 | 1,416  | 105 | 0.51 |
| 23 | 309    | 93  | 682    | 62  | 0.46 |
| 24 | 544    | 124 | 1,215  | 83  | 0.40 |
| 25 | 5,020  | 353 | 9,893  | 251 | 0.53 |
| 26 | 1,701  | 269 | 5,763  | 146 | 0.39 |
| 27 | 288    | 84  | 555    | 60  | 0.56 |
| 28 | 1,119  | 169 | 2,266  | 119 | 0.52 |
| 29 | 77     | 41  | 133    | 31  | 0.57 |
| 30 | 360    | 112 | 994    | 67  | 0.37 |
| 31 | 2,499  | 227 | 4,100  | 177 | 0.60 |
| 32 | 5,788  | 347 | 9,573  | 270 | 0.43 |
| 33 | 2,924  | 333 | 8,827  | 192 | 0.29 |
| 34 | 4,334  | 354 | 9,974  | 233 | 0.50 |
| 35 | 767    | 137 | 1,502  | 98  | 0.58 |
| 36 | 14,061 | 615 | 30,128 | 420 | 0.49 |
| 37 | 9,836  | 613 | 29,891 | 352 | 0.38 |
| 38 | 33,196 | 943 | 70,771 | 646 | 0.51 |

**Most Compact: 0.62 For District: 8**

**Least Compact: 0.22 For District: 17**

### Compactness measure: Length-Width

| District | District Area (SQM) | Perimeter (Miles) | Area of Circle with Same Perimeter | Perimeter of Circle with Same Area | Compactness Value |
|----------|---------------------|-------------------|------------------------------------|------------------------------------|-------------------|
| 1        | 70                  | 56                | 252                                | 30                                 | 1.47              |
| 2        | 60                  | 42                | 139                                | 28                                 | 1.20              |

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|    |        |     |        |     |      |
|----|--------|-----|--------|-----|------|
| 3  | 53     | 48  | 184    | 26  | 2.39 |
| 4  | 253    | 81  | 522    | 56  | 1.77 |
| 5  | 112    | 59  | 276    | 37  | 0.78 |
| 6  | 79     | 44  | 155    | 32  | 0.71 |
| 7  | 96     | 52  | 219    | 35  | 2.20 |
| 8  | 52     | 33  | 89     | 25  | 1.62 |
| 9  | 114    | 57  | 257    | 38  | 3.57 |
| 10 | 61     | 43  | 150    | 28  | 2.50 |
| 11 | 62     | 47  | 176    | 28  | 0.87 |
| 12 | 309    | 92  | 667    | 62  | 1.19 |
| 13 | 112    | 62  | 303    | 38  | 1.78 |
| 14 | 966    | 165 | 2,158  | 110 | 2.90 |
| 15 | 406    | 122 | 1,186  | 71  | 1.65 |
| 16 | 1,797  | 223 | 3,954  | 150 | 4.04 |
| 17 | 3,507  | 419 | 13,972 | 210 | 3.60 |
| 18 | 1,589  | 244 | 4,740  | 141 | 1.00 |
| 19 | 543    | 108 | 924    | 83  | 1.65 |
| 20 | 1,890  | 318 | 8,068  | 154 | 1.74 |
| 21 | 887    | 134 | 1,426  | 106 | 2.34 |
| 22 | 874    | 133 | 1,416  | 105 | 1.55 |
| 23 | 309    | 93  | 682    | 62  | 0.99 |
| 24 | 544    | 124 | 1,215  | 83  | 2.02 |
| 25 | 5,020  | 353 | 9,893  | 251 | 1.05 |
| 26 | 1,701  | 269 | 5,763  | 146 | 1.69 |
| 27 | 288    | 84  | 555    | 60  | 1.35 |
| 28 | 1,119  | 169 | 2,266  | 119 | 1.71 |
| 29 | 77     | 41  | 133    | 31  | 2.01 |
| 30 | 360    | 112 | 994    | 67  | 2.05 |
| 31 | 2,499  | 227 | 4,100  | 177 | 1.88 |
| 32 | 5,788  | 347 | 9,573  | 270 | 0.80 |
| 33 | 2,924  | 333 | 8,827  | 192 | 0.87 |
| 34 | 4,334  | 354 | 9,974  | 233 | 1.55 |
| 35 | 767    | 137 | 1,502  | 98  | 1.27 |
| 36 | 14,061 | 615 | 30,128 | 420 | 1.87 |
| 37 | 9,836  | 613 | 29,891 | 352 | 1.63 |
| 38 | 33,196 | 943 | 70,771 | 646 | 1.87 |

**Most Compact: 4.04 For District: 16**

**Least Compact: 0.71 For District: 6**

### Compactness measure: Convex Hull

| District | District Area (SQM) | Perimeter (Miles) | Area of Circle with Same Perimeter | Perimeter of Circle with Same Area | Compactness Value |
|----------|---------------------|-------------------|------------------------------------|------------------------------------|-------------------|
| 1        | 70                  | 56                | 252                                | 30                                 | 0.65              |
| 2        | 60                  | 42                | 139                                | 28                                 | 0.83              |
| 3        | 53                  | 48                | 184                                | 26                                 | 0.70              |
| 4        | 253                 | 81                | 522                                | 56                                 | 0.83              |

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|    |        |     |        |     |      |
|----|--------|-----|--------|-----|------|
| 5  | 112    | 59  | 276    | 37  | 0.76 |
| 6  | 79     | 44  | 155    | 32  | 0.88 |
| 7  | 96     | 52  | 219    | 35  | 0.81 |
| 8  | 52     | 33  | 89     | 25  | 0.94 |
| 9  | 114    | 57  | 257    | 38  | 0.90 |
| 10 | 61     | 43  | 150    | 28  | 0.88 |
| 11 | 62     | 47  | 176    | 28  | 0.75 |
| 12 | 309    | 92  | 667    | 62  | 0.87 |
| 13 | 112    | 62  | 303    | 38  | 0.73 |
| 14 | 966    | 165 | 2,158  | 110 | 0.91 |
| 15 | 406    | 122 | 1,186  | 71  | 0.77 |
| 16 | 1,797  | 223 | 3,954  | 150 | 0.94 |
| 17 | 3,507  | 419 | 13,972 | 210 | 0.64 |
| 18 | 1,589  | 244 | 4,740  | 141 | 0.71 |
| 19 | 543    | 108 | 924    | 83  | 0.86 |
| 20 | 1,890  | 318 | 8,068  | 154 | 0.62 |
| 21 | 887    | 134 | 1,426  | 106 | 0.96 |
| 22 | 874    | 133 | 1,416  | 105 | 0.89 |
| 23 | 309    | 93  | 682    | 62  | 0.86 |
| 24 | 544    | 124 | 1,215  | 83  | 0.81 |
| 25 | 5,020  | 353 | 9,893  | 251 | 0.87 |
| 26 | 1,701  | 269 | 5,763  | 146 | 0.70 |
| 27 | 288    | 84  | 555    | 60  | 0.95 |
| 28 | 1,119  | 169 | 2,266  | 119 | 0.83 |
| 29 | 77     | 41  | 133    | 31  | 0.93 |
| 30 | 360    | 112 | 994    | 67  | 0.74 |
| 31 | 2,499  | 227 | 4,100  | 177 | 0.90 |
| 32 | 5,788  | 347 | 9,573  | 270 | 0.91 |
| 33 | 2,924  | 333 | 8,827  | 192 | 0.70 |
| 34 | 4,334  | 354 | 9,974  | 233 | 0.78 |
| 35 | 767    | 137 | 1,502  | 98  | 0.80 |
| 36 | 14,061 | 615 | 30,128 | 420 | 0.79 |
| 37 | 9,836  | 613 | 29,891 | 352 | 0.76 |
| 38 | 33,196 | 943 | 70,771 | 646 | 0.87 |

**Most Compact: 0.96 For District: 21**

**Least Compact: 0.62 For District: 20**