

A History of Energy Efficiency in Affordable Housing in Pennsylvania

Why Energy Efficiency?

In the early 2000s

- Real Estate Tax Increases
- Property Insurance Increases
- Lack of rent increases

One solution:

Energy conservation reduces operating costs

LIHTC Process

- Application includes threshold (mandatory) criteria & selection (optional) criteria
- Points awarded for selection criteria
- Tax credits are awarded to highest scoring projects
- Tax Credits sold to investors to provide capital for construction

Energy Efficiency History

2003 – 2004 Selection Criteria:

Exceed insulation standards of IECC by 10% min.

2005 Selection Criteria:

Exceed insulation standards by 10%

Air Tightness of 3.5-5.0 ACH 50

Energy Star Appliances, HVAC & Wtr Htrs

2006-2007 Selection Criteria:

Exceed insulation standards by 10%

Energy Star Appliances, HVAC & Wtr Htrs

HERS score of 85 minimum

Energy Efficiency History (cont'd)

Threshold Criteria

Selection Criteria

2008-2010 E Star Ltg, Appl & Equip
HERS index req'd for E Star

Exceed insulation standards
by 10%

2011-2014 E Star Ltg, Appl & Equip
HERS index req'd for E Star
Exceed insul stds by 10%

Renewables: Solar Thermal,
Solar PV, Geothermal,
Wind Turbines

2015-2016 E Star Ltg, Appl & Equip
Exceed insul stds by 10%
Mandatory criteria of EGC
(req's E Star Label)

Exceed mandatory EGC by
25 points
Achieve reduced HERS index
Build to Passive House stds
(certification not req'd)

Energy Efficiency History (cont'd)

Threshold Criteria

Selection Criteria

| | | |
|------|---|--|
| 2018 | E Star Ltg, Appl & Equip Exceed insul stds by 10% Mandatory criteria of EGC (req's E Star Label) | EGC, LEED or NGBS certif. Achieve reduced HERS index Build to Passive House stds (certification not req'd) |
| 2019 | E Star Ltg, Appl, & Equip Exceed insul stds by 10% E Star for Homes or MF High Rise program certification | EGC, LEED or NGBS certification Achieve reduced HERS Index or Zero Energy Ready Home certif. or Passive House certification |

Summary of 2015-2019 Applications

| | <u>2015</u> | <u>2016</u> | <u>2018</u> | <u>2019</u> |
|---------------------------------------|-------------|-------------|-------------|-------------|
| No. of eligible applications: | 85 | 94 | 89 | 76 |
| No. of applications awarded LIHTCs: | 31 | 33 | 35 | - |
| No. of Energy Star applic's/awards: | 85/31 | 94/33 | 89/35 | 76 |
| No. of reduced HERS applic's/awards: | 35/26 | 63/20 | 79/29 | 27 |
| No. of ZERH applic's: | N/A | N/A | N/A | 36 |
| No. of Passive House applic's/awards: | 31/7 | 27/10 | 15/8 | 11/- |

Results – 2015 Passive House Projects

- 7 Passive House developments awarded tax credits
- 3 are certified Passive House projects
- 1 passed all requirements, but did not pursue certification
- 1 passed all but one requirement
- 1 failed air tightness on 3 of 3 buildings, and over slightly on 2 other categories at one building
- 1 failed 4 of 5 requirements

| Construction Cost Summary for PHFA 2015 Applications | | | | | | | | | | | | |
|--|--------------|--------------|-------------------|----|----|----|-------------|------------|------------|-----------|---------|-----|
| Proj. No. | County | Climate Zone | Units (by BR Qty) | | | | Total Units | Bldg. Area | Constr. \$ | \$/Unit | \$/SF | |
| | | | 0 | 1 | 2 | 3 | | | | | | 4+ |
| SF-1 | Franklin | 5A | | | 33 | 21 | 54 | 70,218 | 7,051,522 | 130,584 | 100 | |
| SF-2 | Schuykill | 5A | | 3 | 9 | 5 | 17 | 21,151 | 2,238,725 | 131,690 | 106 | |
| SF-3 | Philadelphia | 4A | | 5 | 19 | 31 | 55 | 79,795 | 9,363,626 | 156,060 | 117 | |
| SF-4 | Allegheny | 5A | | 26 | 19 | | 45 | 63,548 | 8,863,631 | 196,970 | 117 | |
| SF-5 | Lycoming | 5A | | 16 | 34 | | 50 | 66,147 | 8,141,437 | 162,829 | 123 | |
| SF-6 | Bradford | 5A | | 10 | 24 | 16 | 50 | 62,956 | 7,964,823 | 159,296 | 127 | |
| SF-7 | Centre | 5A | | 20 | 20 | | 40 | 53,652 | 7,523,233 | 188,081 | 140 | |
| SF-8 | Lebanon | 5A | | 46 | 16 | | 62 | 84,168 | 11,742,459 | 189,395 | 140 | |
| SF-9 | Bradford | 5A | | 2 | 26 | 12 | 40 | 59,954 | 8,369,296 | 209,232 | 140 | |
| SF-10 | Butler | 5A | | 3 | 39 | 18 | 60 | 67,904 | 9,827,275 | 163,788 | 145 | |
| SF-11 | Erie | 5A | | 9 | 34 | | 43 | 53,454 | 7,870,669 | 183,039 | 147 | |
| SF-12 | Dauphin | 5A | | 3 | 3 | 25 | 4 | 35 | 61,504 | 9,192,750 | 262,650 | 149 |
| SF-13 | Berks | 5A | | 22 | 20 | 16 | 58 | 62,097 | 9,305,340 | 160,437 | 150 | |
| SF-14 | Franklin | 5A | | 7 | 25 | 24 | 56 | 77,469 | 11,791,991 | 210,571 | 152 | |
| SF-15 | Luzerne | 5A | | 26 | 15 | 15 | 56 | 56,250 | 8,968,491 | 160,152 | 159 | |
| SF-16 | Union | 5A | | 5 | 12 | 8 | 6 | 31 | 43,868 | 7,071,066 | 228,099 | 161 |
| SF-17 | Chester | 4A | | 48 | 12 | | 60 | 58,349 | 9,809,238 | 163,487 | 168 | |
| SF-18 | Allegheny | 5A | | 4 | 30 | 18 | 52 | 77,351 | 12,979,386 | 249,604 | 168 | |
| SF-19 | Berks | 5A | | 10 | 21 | 11 | 42 | 57,722 | 9,785,000 | 232,976 | 170 | |
| SF-20 | Montgomery | 4A | | 16 | 24 | 15 | 55 | 61,480 | 11,113,700 | 202,067 | 181 | |
| SF-21 | Delaware | 4A | | 8 | 34 | 14 | 56 | 65,790 | 12,184,074 | 217,573 | 196 | |
| SF-22 | Philadelphia | 4A | | 17 | 16 | 2 | 35 | 45,476 | 8,905,240 | 254,435 | 196 | |
| SF-23 | Allegheny | 5A | | 14 | 9 | | 23 | 28,205 | 5,552,583 | 241,417 | 197 | |
| SF-24 | Westmoreland | 5A | | 28 | 8 | | 36 | 43,872 | 8,331,567 | 231,432 | 245 | |
| SF-25 | Philadelphia | 4A | | 10 | 19 | 11 | 40 | 46,757 | 11,453,809 | 286,345 | 245 | |

Single Family / Townhouse

| Construction Cost Summary for PHFA 2015 Applications | | | | | | | | | | | |
|--|--------------|--------------|-------------------|----|----|----|-------------|------------|------------|---------|-------|
| Proj. No. | County | Climate Zone | Units (by BR Qty) | | | | Total Units | Bldg. Area | Constr. \$ | \$/Unit | \$/SF |
| | | | 0 | 1 | 2 | 3 | | | | | |
| AR-1 | Lehigh | 5A | | 34 | 4 | 11 | 49 | 65,339 | 6,392,809 | 130,465 | 98 |
| AR-2 | Erie | 5A | | 29 | 16 | | 45 | 53,021 | 6,152,972 | 136,733 | 116 |
| AR-3 | Philadelphia | 4A | 12 | 54 | | | 66 | 77,975 | 9,751,707 | 147,753 | 125 |
| AR-4 | Allegheny | 5A | 2 | 49 | 4 | | 55 | 65,577 | 9,514,764 | 172,996 | 145 |
| AR-5 | Delaware | 4A | | 53 | | | 53 | 51,690 | 8,030,480 | 151,518 | 155 |
| AR-6 | Philadelphia | 4A | | 44 | | | 44 | 49,406 | 8,361,579 | 190,036 | 169 |
| AR-7 | Montgomery | 4A | | 33 | 3 | 7 | 43 | 55,832 | 9,468,816 | 220,205 | 170 |
| AR-8 | Philadelphia | 4A | | | 28 | 10 | 38 | 53,840 | 9,515,893 | 250,418 | 177 |
| AR-9 | Dauphin | 5A | 5 | 17 | 6 | | 28 | 45,434 | 8,075,064 | 288,395 | 178 |
| AR-10 | Allegheny | 5A | | 33 | 3 | | 36 | 50,664 | 9,436,523 | 262,126 | 186 |
| AR-11 | Philadelphia | 4A | | 46 | | | 46 | 56,478 | 10,795,027 | 234,675 | 191 |
| AR-12 | Philadelphia | 4A | | 27 | 10 | | 37 | 48,768 | 9,658,098 | 261,030 | 198 |
| AR-13 | Philadelphia | 4A | | 30 | 21 | | 51 | 62,509 | 13,609,683 | 266,857 | 218 |
| AR-14 | Washington | 4A | | 17 | 7 | | 24 | 35,299 | 7,856,113 | 327,338 | 223 |
| AR-15 | Philadelphia | 4A | | 62 | | | 62 | 70,991 | 25,995,741 | 419,286 | 366 |

Adaptive Reuse Bldgs.

| Construction Cost Summary for PHFA 2015 Applications | | | | | | | | | | | |
|--|----------------|--------------|-------------------|----|----|----|-------------|------------|------------|---------|-------|
| Proj. No. | County | Climate Zone | Units (by BR Qty) | | | | Total Units | Bldg. Area | Constr. \$ | \$/Unit | \$/SF |
| | | | 0 | 1 | 2 | 3 | | | | | |
| MS-1 | Northumberland | 5A | | 35 | | | 35 | 40,397 | 4,276,084 | 122,174 | 106 |
| MS-2 | Dauphin | 5A | | 22 | 14 | 14 | 50 | 88,314 | 10,055,562 | 201,111 | 114 |
| MS-3 | Dauphin | 5A | | 18 | 59 | | 77 | 92,000 | 10,668,511 | 138,552 | 116 |
| MS-4 | Lancaster | 5A | | 46 | 6 | | 52 | 71,758 | 8,456,719 | 162,629 | 118 |
| MS-5 | Blair | 5A | | 33 | 20 | | 53 | 82,070 | 9,727,007 | 183,528 | 119 |
| MS-6 | Chester | 4A | | 46 | 15 | | 61 | 76,340 | 9,638,964 | 158,016 | 126 |
| MS-7 | Lancaster | 5A | | 13 | 39 | 26 | 78 | 88,910 | 11,681,226 | 149,759 | 131 |
| MS-8 | Clearfield | 6A | | 24 | 6 | | 30 | 42,254 | 5,551,584 | 185,053 | 131 |
| MS-9 | Indiana | 5A | | 40 | | | 40 | 36,743 | 4,898,995 | 122,475 | 133 |
| MS-10 | Bradford | 5A | | 50 | 6 | | 56 | 57,817 | 7,738,172 | 138,182 | 134 |
| MS-11 | Cambria | 5A | | 32 | 11 | | 43 | 44,887 | 6,341,616 | 147,479 | 141 |
| MS-12 | Dauphin | 5A | | 38 | 16 | | 54 | 58,335 | 8,201,250 | 151,875 | 141 |
| MS-13 | Mifflin | 5A | | 30 | 4 | | 34 | 39,447 | 5,559,187 | 163,506 | 141 |
| MS-14 | Fayette | 5A | | 12 | 12 | | 24 | 29,586 | 4,192,325 | 174,680 | 142 |
| MS-15 | Allegheny | 5A | | 24 | 12 | 13 | 49 | 67,340 | 9,698,634 | 197,931 | 144 |
| MS-16 | Lackawanna | 5A | | 44 | 4 | | 48 | 49,460 | 7,159,738 | 149,161 | 145 |
| MS-17 | Centre | 5A | | 37 | 11 | | 48 | 57,959 | 8,490,644 | 176,888 | 146 |
| MS-18 | Chester | 4A | | 41 | 3 | 5 | 49 | 54,287 | 8,007,477 | 163,418 | 148 |
| MS-19 | Lehigh | 5A | | 54 | 7 | | 61 | 63,949 | 9,520,945 | 156,081 | 149 |
| MS-20 | Fayette | 5A | | 21 | 3 | | 24 | 36,064 | 5,407,359 | 225,307 | 150 |
| MS-21 | Chester | 4A | | 61 | 3 | | 64 | 70,083 | 10,557,500 | 164,961 | 151 |
| MS-22 | Allegheny | 5A | | 54 | 12 | | 66 | 70,689 | 10,787,052 | 163,440 | 153 |
| MS-23 | Allegheny | 5A | | 40 | 6 | | 46 | 58,617 | 9,134,790 | 198,582 | 156 |
| MS-24 | Wayne | 6A | | 36 | 4 | | 40 | 40,959 | 6,460,530 | 161,513 | 158 |
| MS-25 | Centre | 5A | | | 12 | | 12 | 16,796 | 2,683,900 | 223,658 | 160 |
| MS-26 | Beaver | 5A | | 40 | 12 | | 52 | 55,361 | 9,468,440 | 182,085 | 171 |
| MS-27 | Lancaster | 5A | | 51 | | | 51 | 51,500 | 8,871,635 | 173,954 | 172 |
| MS-28 | Allegheny | 5A | | 52 | 8 | | 60 | 66,733 | 11,716,729 | 195,279 | 176 |
| MS-29 | Montgomery | 4A | | 40 | 4 | | 44 | 44,687 | 8,202,314 | 186,416 | 184 |
| MS-30 | Montgomery | 4A | | 50 | | | 50 | 42,265 | 8,029,015 | 160,580 | 190 |
| MS-31 | Crawford | 5A | | 36 | 4 | | 40 | 38,953 | 7,490,675 | 187,267 | 192 |
| MS-32 | Philadelphia | 4A | | 9 | 8 | 7 | 24 | 31,220 | 6,031,050 | 251,294 | 193 |
| MS-33 | Westmoreland | 5A | | 47 | | | 47 | 49,080 | 9,825,224 | 209,407 | 200 |
| MS-34 | Philadelphia | 4A | | 58 | 4 | | 62 | 56,120 | 11,262,762 | 181,657 | 201 |
| MS-35 | Philadelphia | 4A | 60 | | | | 60 | 57,672 | 11,915,227 | 198,587 | 207 |
| MS-36 | Philadelphia | 4A | | 20 | 4 | | 24 | 26,284 | 5,523,620 | 230,151 | 210 |
| MS-37 | Philadelphia | 4A | | 34 | 11 | | 45 | 42,523 | 8,964,723 | 199,216 | 211 |
| MS-38 | Philadelphia | 4A | | 52 | | | 52 | 50,275 | 10,703,403 | 205,835 | 213 |
| MS-39 | Philadelphia | 4A | | 39 | 11 | | 50 | 53,416 | 11,371,112 | 227,422 | 213 |
| MS-40 | Philadelphia | 4A | | 24 | | | 24 | 24,284 | 5,194,462 | 216,436 | 214 |
| MS-41 | Philadelphia | 4A | | 45 | | | 45 | 46,754 | 10,118,014 | 224,845 | 216 |
| MS-42 | Philadelphia | 4A | | 53 | | | 53 | 50,312 | 10,900,733 | 205,674 | 217 |
| MS-43 | Philadelphia | 4A | | 54 | | | 54 | 48,965 | 10,664,381 | 197,489 | 218 |
| MS-44 | Philadelphia | 4A | | 45 | 5 | | 50 | 55,099 | 12,137,508 | 242,750 | 220 |
| MS-45 | Philadelphia | 4A | 88 | | | | 88 | 79,650 | 18,005,791 | 204,611 | 226 |

Multi-Story / Elevator

| Construction Cost Summary for PHFA 2016 Applications | | | | | | | | | | | | |
|--|--------------|--------------|-----------------|----|----|----|----|-------------|-------------------|-------------------|-----------|---------|
| Proj. No. | County | Climate Zone | Units by BR Qty | | | | | Total Units | Resid. Bldg. Area | Resid. Constr. \$ | \$ / Unit | \$ / SF |
| | | | 0 | 1 | 2 | 3 | 4+ | | | | | |
| SF-01 | Dauphin | 5A | | 14 | 16 | 15 | 15 | 60 | 99,625 | 10,419,031 | 173,651 | 105 |
| SF-02 | Lebanon | 5A | | 9 | 32 | 14 | | 55 | 78,627 | 8,446,000 | 153,564 | 107 |
| SF-03 | Lycoming | 5A | | 20 | 40 | | | 60 | 82,730 | 9,436,382 | 157,273 | 114 |
| SF-04 | Columbia | 5A | | | 7 | 17 | | 24 | 48,499 | 5,669,777 | 236,241 | 117 |
| SF-05 | Philadelphia | 4A | | 5 | 19 | 31 | 5 | 60 | 79,795 | 9,739,093 | 162,318 | 122 |
| SF-06 | Wyoming | 5A | | | 30 | 12 | | 42 | 72,100 | 9,168,380 | 218,295 | 127 |
| SF-07 | Erie | 5A | | 8 | 20 | 18 | | 46 | 85,819 | 10,964,900 | 238,367 | 128 |
| SF-08 | Lancaster | 5A | | 6 | 33 | 21 | | 60 | 78,825 | 10,259,118 | 170,985 | 130 |
| SF-09 | Cumberland | 5A | | | 18 | 34 | | 52 | 75,275 | 9,921,606 | 190,800 | 132 |
| SF-10 | Centre | 5A | | 6 | 24 | 18 | | 48 | 75,737 | 10,193,457 | 212,364 | 135 |
| SF-11 | Lehigh | 5A | | 19 | 27 | 16 | | 62 | 71,254 | 9,631,860 | 155,353 | 135 |
| SF-12 | Lancaster | 5A | | 41 | 79 | 18 | | 138 | 154,370 | 21,137,388 | 153,169 | 137 |
| SF-13 | Erie | 5A | | | 9 | 31 | | 40 | 53,454 | 7,870,669 | 196,767 | 147 |
| SF-14 | Montgomery | 4A | | | 19 | 29 | | 48 | 59,976 | 8,858,000 | 184,542 | 148 |
| SF-15 | Lebanon | 5A | | | 49 | 13 | | 62 | 82,974 | 12,349,192 | 199,181 | 149 |
| SF-16 | Cumberland | 5A | | | 10 | 30 | 10 | 50 | 72,707 | 10,865,524 | 217,310 | 149 |
| SF-17 | Schuylkill | 5A | | 1 | 11 | 5 | | 17 | 21,544 | 3,225,548 | 189,738 | 150 |
| SF-18 | Berks | 5A | | 10 | 21 | 11 | | 42 | 57,722 | 8,755,000 | 208,452 | 152 |
| SF-19 | Berks | 5A | | 22 | 20 | 16 | | 58 | 62,097 | 9,440,383 | 162,765 | 152 |
| SF-20 | Franklin | 5A | | 6 | 21 | 21 | | 48 | 66,583 | 10,404,256 | 216,755 | 156 |
| SF-21 | Lehigh | 5A | | 9 | 15 | 20 | 4 | 48 | 53,333 | 8,377,963 | 174,541 | 157 |
| SF-22 | Chester | 4A | | 19 | 18 | 11 | | 48 | 58,541 | 9,248,927 | 192,686 | 158 |
| SF-23 | Cumberland | 5A | | 5 | 22 | 8 | | 35 | 44,186 | 7,656,200 | 218,749 | 173 |
| SF-24 | Montgomery | 4A | | 8 | 21 | 15 | 6 | 50 | 65,907 | 11,589,411 | 231,788 | 176 |
| SF-25 | Allegheny | 5A | | 35 | 16 | 14 | | 65 | 87,255 | 15,376,648 | 236,564 | 176 |
| SF-26 | Delaware | 4A | | 8 | 34 | 14 | | 56 | 65,212 | 11,914,849 | 212,765 | 183 |
| SF-27 | Philadelphia | 4A | | | 17 | 16 | 2 | 35 | 45,476 | 9,441,620 | 269,761 | 208 |
| SF-28 | Armstrong | 5A | | | 24 | | | 24 | 28,812 | 6,017,450 | 250,727 | 209 |
| SF-29 | Philadelphia | 4A | | | 28 | 14 | | 42 | 47,964 | 10,022,268 | 238,625 | 209 |
| SF-30 | Philadelphia | 4A | | 11 | 10 | 11 | | 32 | 31,619 | 6,732,433 | 210,389 | 213 |
| SF-31 | Philadelphia | 4A | | 8 | 19 | 24 | 4 | 55 | 66,383 | 19,011,723 | 345,668 | 286 |
| SF-32 | Philadelphia | 4A | | 45 | | | | 45 | 23,302 | 7,408,602 | 164,636 | 318 |

| Construction Cost Summary for PHFA 2016 Applications | | | | | | | | | | | | |
|--|--------------|--------------|-----------------|----|--------|---|----|-------------|-------------------|-------------------|-----------|---------|
| Proj. No. | County | Climate Zone | Units by BR Qty | | | | | Total Units | Resid. Bldg. Area | Resid. Constr. \$ | \$ / Unit | \$ / SF |
| | | | 0 | 1 | 2 | 3 | 4+ | | | | | |
| AR-01 | Monroe | 5A | | 36 | 4 | | | 40 | 54,215 | 5,753,672 | 143,842 | 106 |
| AR-02 | Luzerne | 5A | | 6 | 54 | 2 | | 62 | 88,489 | 9,900,711 | 159,689 | 112 |
| AR-03 | Philadelphia | 4A | | 12 | 54 | | | 66 | 77,978 | 10,123,117 | 153,381 | 130 |
| AR-04 | Allegheny | 5A | | 33 | 8 | | | 41 | 70,409 | 9,181,888 | 223,948 | 130 |
| AR-05 | Butler | 5A | | 44 | 18 | | | 62 | 73,114 | 10,046,992 | 162,048 | 137 |
| AR-06 | Washington | 5A | | 24 | 41,046 | | | 24 | 41,046 | 6,169,663 | 257,069 | 150 |
| AR-07 | Allegheny | 5A | | 2 | 49 | 4 | | 55 | 65,190 | 10,592,039 | 192,583 | 162 |
| AR-08 | Delaware | 4A | | 50 | | | | 50 | 50,548 | 8,727,828 | 174,557 | 173 |
| AR-09 | Philadelphia | 4A | | 60 | | | | 60 | 65,041 | 11,803,992 | 196,733 | 181 |
| AR-10 | Philadelphia | 4A | | 74 | | | | 74 | 93,285 | 20,223,060 | 273,285 | 217 |
| AR-11 | Philadelphia | 4A | | 20 | 37 | | | 57 | 63,960 | 14,005,881 | 245,717 | 219 |
| AR-12 | Perry | 5A | | 28 | 3 | | | 31 | 36,152 | 8,548,665 | 275,763 | 236 |

| Construction Cost Summary for PHFA 2016 Applications | | | | | | | | | | | | |
|--|----------------|--------------|-----------------|----|--------|----|----|-------------|-------------------|-------------------|-----------|---------|
| Proj. No. | County | Climate Zone | Units by BR Qty | | | | | Total Units | Resid. Bldg. Area | Resid. Constr. \$ | \$ / Unit | \$ / SF |
| | | | 0 | 1 | 2 | 3 | 4+ | | | | | |
| MS-01 | Berks | 5A | | 40 | 20 | | | 60 | 62,149 | 7,432,636 | 123,877 | 120 |
| MS-02 | Tioga | 6A | | 34 | 6 | | | 40 | 48,735 | 5,999,734 | 149,993 | 123 |
| MS-03 | Dauphin | 5A | | 35 | 2 | | | 37 | 43,964 | 5,421,065 | 146,515 | 123 |
| MS-04 | Bradford | 5A | | 38 | 12 | 6 | | 56 | 63,768 | 8,446,000 | 150,821 | 132 |
| MS-05 | Lancaster | 5A | | 46 | 6 | | | 52 | 92,370 | 12,565,629 | 241,647 | 136 |
| MS-06 | Fayette | 5A | | 12 | 12 | | | 24 | 28,904 | 3,942,323 | 164,263 | 136 |
| MS-07 | Cambria | 5A | | 32 | 11 | | | 43 | 49,491 | 6,879,001 | 159,977 | 138 |
| MS-08 | Clearfield | 6A | | 24 | 6 | | | 30 | 41,915 | 5,855,263 | 195,175 | 140 |
| MS-09 | Chester | 4A | | 56 | 3 | | | 59 | 64,180 | 9,033,100 | 153,103 | 141 |
| MS-10 | Centre | 5A | | 16 | 34 | | | 50 | 60,912 | 8,666,068 | 173,321 | 142 |
| MS-11 | Clinton | 5A | | 28 | 4 | | | 32 | 37,454 | 5,333,806 | 166,681 | 142 |
| MS-12 | Allegheny | 5A | | 24 | 12 | 13 | | 49 | 67,340 | 9,698,634 | 197,931 | 144 |
| MS-13 | Luzerne | 5A | | 32 | 3 | | | 35 | 44,543 | 6,503,636 | 185,818 | 146 |
| MS-14 | Dauphin | 5A | | 20 | 19,157 | | | 20 | 19,157 | 2,803,860 | 140,193 | 146 |
| MS-15 | Butler | 5A | | 68 | | | | 68 | 66,845 | 9,821,302 | 144,431 | 147 |
| MS-16 | Westmoreland | 5A | | 15 | 13 | 8 | | 36 | 46,095 | 6,855,424 | 190,428 | 149 |
| MS-17 | Lackawanna | 5A | | 12 | 12 | 8 | 4 | 36 | 50,019 | 7,560,000 | 210,000 | 151 |
| MS-18 | Northumberland | 5A | | 32 | | | | 32 | 38,240 | 5,789,694 | 180,928 | 151 |
| MS-19 | Centre | 5A | | 37 | 11 | | | 48 | 57,959 | 8,781,136 | 182,940 | 152 |
| MS-20 | Lackawanna | 5A | | 44 | 4 | | | 48 | 49,460 | 7,493,999 | 156,125 | 152 |
| MS-21 | Allegheny | 5A | | 30 | 34 | | | 64 | 69,605 | 10,837,117 | 169,330 | 156 |
| MS-22 | Dauphin | 5A | | 43 | 11 | | | 54 | 51,319 | 8,411,465 | 155,768 | 164 |
| MS-23 | Montgomery | 4A | | 60 | | | | 60 | 58,681 | 9,643,959 | 160,733 | 164 |
| MS-24 | Adams | 5A | | 39 | 4 | | | 43 | 50,532 | 8,515,443 | 198,034 | 169 |
| MS-25 | Clarion | 5A | | 48 | | | | 48 | 53,668 | 9,090,720 | 189,390 | 169 |
| MS-26 | Allegheny | 5A | | 40 | 6 | | | 46 | 56,969 | 10,124,143 | 220,090 | 178 |
| MS-27 | Allegheny | 5A | | 28 | 8 | | | 36 | 42,500 | 7,582,274 | 210,619 | 178 |
| MS-28 | Chester | 4A | | 47 | 13 | | | 60 | 61,551 | 10,982,435 | 183,041 | 178 |
| MS-29 | Delaware | 4A | | 38 | 3 | | | 41 | 47,797 | 8,539,207 | 208,273 | 179 |
| MS-30 | Allegheny | 5A | | 52 | 8 | | | 60 | 63,861 | 11,647,354 | 194,123 | 182 |
| MS-31 | Philadelphia | 4A | | 37 | 44 | | | 81 | 93,000 | 17,635,125 | 217,718 | 190 |
| MS-32 | Crawford | 5A | | 36 | 4 | | | 40 | 38,953 | 7,552,475 | 188,812 | 194 |
| MS-33 | Westmoreland | 5A | | 47 | | | | 47 | 49,080 | 9,801,657 | 208,546 | 200 |
| MS-34 | Bucks | 4A | | 56 | 10 | | | 66 | 61,576 | 12,448,922 | 188,620 | 202 |
| MS-35 | Lycoming | 5A | | 23 | 11 | | | 34 | 35,437 | 7,169,151 | 210,857 | 202 |
| MS-36 | Philadelphia | 4A | | 61 | | | | 61 | 60,137 | 12,416,322 | 203,546 | 206 |
| MS-37 | Bradford | 5A | | 40 | 10 | | | 50 | 56,580 | 11,852,026 | 237,041 | 209 |
| MS-38 | Philadelphia | 4A | | 58 | 4 | | | 62 | 57,653 | 12,079,768 | 194,835 | 210 |
| MS-39 | Philadelphia | 4A | | 52 | | | | 52 | 46,619 | 9,903,739 | 190,457 | 212 |
| MS-40 | Philadelphia | 4A | | 60 | | | | 60 | 56,672 | 12,174,301 | 202,905 | 215 |
| MS-41 | Philadelphia | 4A | | 45 | | | | 45 | 48,351 | 10,464,750 | 232,550 | 216 |
| MS-42 | Montgomery | 4A | | 50 | | | | 50 | 42,265 | 9,236,729 | 184,735 | 219 |
| MS-43 | Allegheny | 5A | | 29 | 4 | | | 33 | 37,592 | 8,284,054 | 251,032 | 220 |
| MS-44 | Philadelphia | 4A | | 46 | 4 | | | 50 | 46,640 | 10,701,164 | 214,023 | 225 |
| MS-45 | Philadelphia | 4A | | 53 | | | | 53 | 50,312 | 11,711,200 | 220,966 | 233 |
| MS-46 | Philadelphia | 4A | | 34 | 11 | | | 45 | 42,520 | 10,560,747 | 234,683 | 248 |
| MS-47 | Philadelphia | 4A | | 24 | | | | 24 | 24,284 | 6,040,593 | 251,691 | 249 |
| MS-48 | Philadelphia | 4A | | 60 | | | | 60 | 65,340 | 17,249,402 | 287,490 | 264 |
| MS-49 | Luzerne | 5A | | 36 | | | | 36 | 27,296 | 7,653,000 | 212,583 | 280 |
| MS-50 | Philadelphia | 4A | | 48 | | | | 48 | 46,000 | 12,915,822 | 269,080 | 281 |

| Construction Cost Summary of 2018 PHFA Applications | | | | | | | | | | | | |
|---|---------------|--------------|-----------------|------|----|----|----|-------------|------------------|-----------------|-----------|---------|
| Ref. No. | County | Climate Zone | Units by BR Qty | | | | | Total Units | Resid. Bldg Area | Resid Constr \$ | \$ / Unit | \$ / SF |
| | | | 0 | 1 | 2 | 3 | 4+ | | | | | |
| | | | SF-01 | York | 5A | | | | | | | |
| SF-02 | Dauphin | 5A | | | | 22 | 22 | 44 | 66,603 | 8,409,248 | 191,119 | 129 |
| SF-03 | York | 5A | | 6 | 23 | 24 | 3 | 56 | 72,013 | 9,258,025 | 165,322 | 126 |
| SF-04 | Berks | 5A | | | 24 | 22 | | 46 | 66,030 | 8,557,500 | 186,033 | 130 |
| SF-05 | Lebanon | 5A | | 18 | 26 | 16 | | 60 | 76,101 | 10,333,056 | 172,218 | 136 |
| SF-06 | Franklin | 5A | | 7 | 7 | 25 | | 32 | 54,375 | 8,150,464 | 254,702 | 150 |
| SF-07 | Philadelphia | 4A | | 2 | 5 | 11 | 2 | 20 | 29,503 | 4,490,975 | 224,549 | 152 |
| SF-08 | Lackawanna | 5A | | 12 | 12 | 8 | 4 | 36 | 50,019 | 7,805,595 | 216,822 | 156 |
| SF-09 | Franklin | 5A | | 6 | 21 | 21 | | 48 | 66,583 | 10,727,005 | 223,479 | 161 |
| SF-10 | Multiple Co's | 5A | 52 | | | | | 52 | 52,330 | 8,909,580 | 171,338 | 170 |
| SF-11 | York | 5A | | 18 | 9 | 7 | | 34 | 35,636 | 6,396,969 | 188,146 | 180 |
| SF-12 | Allegheny | 5A | | 47 | 10 | | | 57 | 48,150 | 9,106,659 | 159,766 | 189 |
| SF-13 | Westmoreland | 5A | | 3 | 6 | 9 | | 18 | 20,489 | 4,108,548 | 228,253 | 201 |
| SF-14 | Allegheny | 5A | | 4 | 7 | 9 | | 20 | 26,198 | 5,407,155 | 270,358 | 206 |
| SF-15 | Armstrong | 5A | | | 24 | | | 24 | 29,147 | 6,230,195 | 259,591 | 214 |
| SF-16 | Susquehanna | 6A | | 34 | 2 | | | 36 | 31,103 | 7,031,404 | 195,317 | 226 |
| SF-17 | Philadelphia | 4A | | | 17 | 16 | 2 | 35 | 45,476 | 10,281,980 | 293,771 | 226 |
| SF-18 | Philadelphia | 4A | | 11 | 10 | 12 | | 33 | 34,388 | 8,875,449 | 268,953 | 258 |
| SF-19 | Philadelphia | 4A | | 28 | 12 | | | 40 | 46,232 | 12,214,948 | 305,374 | 264 |
| SF-20 | Philadelphia | 4A | | 12 | 18 | 11 | 9 | 50 | 71,903 | 21,367,901 | 427,358 | 297 |

| Construction Cost Summary of 2018 PHFA Applications | | | | | | | | | | | | |
|---|--------------|--------------|-----------------|------------|----|----|----|-------------|------------------|-----------------|-----------|---------|
| Ref. No. | County | Climate Zone | Units by BR Qty | | | | | Total Units | Resid. Bldg Area | Resid Constr \$ | \$ / Unit | \$ / SF |
| | | | 0 | 1 | 2 | 3 | 4+ | | | | | |
| | | | AR-01 | Montgomery | 4A | 2 | 20 | | | | | |
| AR-02 | Berks | | | 12 | 26 | 12 | | 50 | 68,514 | 8,926,251 | 178,525 | 130 |
| AR-03 | Philadelphia | 4A | | | 28 | 12 | | 40 | 60,600 | 9,683,347 | 242,084 | 160 |
| AR-04 | Delaware | 4A | | 50 | | | | 50 | 50,548 | 8,892,507 | 177,850 | 176 |
| AR-05 | Allegheny | 5A | 3 | 27 | 10 | | | 40 | 45,120 | 8,047,850 | 201,196 | 178 |
| AR-06 | Philadelphia | 4A | 30 | 12 | | | | 42 | 50,902 | 9,712,500 | 231,250 | 191 |
| AR-07 | Schuylkill | 5A | | 27 | 3 | | | 30 | 43,539 | 8,656,817 | 288,561 | 199 |
| AR-08 | Philadelphia | 4A | 0 | 59 | | | | 59 | 113,868 | 22,919,307 | 388,463 | 201 |
| AR-09 | Philadelphia | 4A | | 63 | 4 | | | 67 | 88,911 | 18,256,101 | 272,479 | 205 |
| AR-10 | Perry | 5A | | 28 | 3 | | | 31 | 44,090 | 9,201,187 | 296,812 | 209 |
| AR-11 | Delaware | 4A | | 50 | | | | 50 | 61,346 | 12,879,125 | 257,583 | 210 |
| AR-12 | Allegheny | 5A | 7 | 27 | 1 | | | 35 | 43,900 | 10,633,286 | 303,808 | 242 |

| Construction Cost Summary of 2018 PHFA Applications | | | | | | | | | | | | |
|---|----------------|--------------|-----------------|------|--------|-----------|-----|-------------|------------------|-----------------|-----------|---------|
| Ref. No. | County | Climate Zone | Units by BR Qty | | | | | Total Units | Resid. Bldg Area | Resid Constr \$ | \$ / Unit | \$ / SF |
| | | | 0 | 1 | 2 | 3 | 4+ | | | | | |
| | | | MS-01 | Erie | 5A | | | | | | | |
| MS-02 | Lancaster | 5A | | 44 | 18 | | | 62 | 76,045 | 8,306,538 | 133,976 | 109 |
| MS-03 | Lancaster | 5A | | 45 | 15 | | | 60 | 68,993 | 8,544,047 | 142,401 | 124 |
| MS-04 | Cumberland | 5A | | 14 | 12 | 16 | | 42 | 49,581 | 6,440,993 | 153,357 | 130 |
| MS-05 | Berks | 5A | | 45 | 12 | | | 57 | 59,916 | 7,892,757 | 138,469 | 132 |
| MS-06 | Westmoreland | 5A | | 15 | 13 | 8 | | 36 | 46,095 | 6,087,669 | 169,102 | 132 |
| MS-07 | Fayette | 5A | | 18 | 18 | | | 36 | 42,820 | 5,679,247 | 157,757 | 133 |
| MS-08 | Dauphin | 5A | | 35 | 2 | | | 37 | 43,928 | 5,896,750 | 159,372 | 134 |
| MS-09 | Bradford | 5A | | 38 | 12 | | | 56 | 63,759 | 8,603,563 | 153,635 | 135 |
| MS-10 | Allegheny | 5A | | 30 | 10 | | | 40 | 54,495 | 7,335,570 | 183,394 | 135 |
| MS-11 | Lancaster | 5A | | 46 | 6 | | | 52 | 94,440 | 12,791,060 | 245,982 | 135 |
| MS-12 | Centre | 5A | | 16 | 34 | | | 50 | 60,599 | 8,371,068 | 167,421 | 138 |
| MS-13 | Montgomery | 4A | | 42 | 14 | | | 56 | 60,166 | 8,477,023 | 151,375 | 141 |
| MS-14 | Luzerne | 5A | | 32 | 3 | | | 35 | 44,543 | 6,416,086 | 183,317 | 144 |
| MS-15 | Clinton | 5A | | 28 | 4 | | | 32 | 37,454 | 5,470,901 | 170,966 | 146 |
| MS-16 | Dauphin | 5A | | 20 | 29 | | | 49 | 53,976 | 8,066,609 | 164,625 | 149 |
| MS-17 | Washington | 5A | | 21 | 25 | | | 46 | 53,310 | 8,000,885 | 173,932 | 150 |
| MS-18 | Franklin | 5A | | 36 | 4 | | | 40 | 54,596 | 8,326,929 | 208,173 | 153 |
| MS-19 | Chester | 4A | | 57 | 3 | | | 60 | 60,931 | 9,310,170 | 155,170 | 153 |
| MS-20 | Northumberland | 5A | | 32 | 4 | | | 36 | 43,826 | 6,998,140 | 194,393 | 160 |
| MS-21 | York | 5A | | 16 | 26 | 8 | | 50 | 63,425 | 10,125,538 | 202,511 | 160 |
| MS-22 | Allegheny | 5A | | 27 | 18 | 9 | | 54 | 64,875 | 10,797,000 | 199,944 | 166 |
| MS-23 | Westmoreland | 5A | | 43 | 4 | | | 47 | 50,680 | 8,439,569 | 179,565 | 167 |
| MS-24 | Clearfield | 5A | | 24 | 6 | | | 30 | 35,984 | 6,065,728 | 202,191 | 169 |
| MS-25 | Beaver | 5A | | 44 | 8 | | | 52 | 57,297 | 9,797,660 | 188,417 | 171 |
| MS-26 | Northampton | 5A | | 12 | 33 | 15 | | 60 | 60,212 | 10,329,351 | 172,156 | 172 |
| MS-27 | Montgomery | 4A | | 60 | 110 | 8,609 | 266 | 60 | 61,110 | 10,869,266 | 181,154 | 178 |
| MS-28 | Dauphin | 5A | | 38 | 11 | | | 49 | 48,638 | 8,730,338 | 178,178 | 180 |
| MS-29 | Montgomery | 4A | | 66 | 8 | | | 74 | 74,468 | 13,541,230 | 182,990 | 182 |
| MS-30 | Clarion | 5A | | 39 | 3 | | | 42 | 48,847 | 8,988,545 | 214,013 | 184 |
| MS-31 | Philadelphia | 4A | | 28 | 13 | | | 41 | 49,625 | 9,204,879 | 224,509 | 185 |
| MS-32 | Lehigh | 5A | | 27 | 13 | | | 40 | 40,937 | 7,663,199 | 191,580 | 187 |
| MS-33 | Allegheny | 5A | | 31 | 3 | 1 | | 35 | 46,015 | 8,714,276 | 248,979 | 189 |
| MS-34 | Butler | 5A | | 30 | 13 | 1 | | 44 | 50,825 | 9,697,495 | 220,398 | 191 |
| MS-35 | Delaware | 4A | | 58 | | | | 58 | 57,365 | 11,293,126 | 194,709 | 197 |
| MS-36 | Bucks | 4A | | 68 | 1 | | | 69 | 62,844 | 12,503,344 | 181,208 | 199 |
| MS-37 | Delaware | 4A | | 38 | 3 | | | 41 | 43,515 | 8,746,409 | 213,327 | 201 |
| MS-38 | Blair | 5A | | 43 | 2 | | | 45 | 47,642 | 9,595,216 | 213,227 | 201 |
| MS-39 | Tioga | 5A | | 34 | 6 | | | 40 | 32,800 | 6,591,082 | 164,777 | 201 |
| MS-40 | Lycoming | 5A | | 18 | 6 | | | 24 | 26,749 | 5,419,721 | 225,822 | 203 |
| MS-41 | Philadelphia | 4A | | 44 | | | | 44 | 46,306 | 9,443,528 | 214,626 | 204 |
| MS-42 | Philadelphia | 4A | | 52 | | | | 52 | 46,619 | 9,893,465 | 190,259 | 212 |
| MS-43 | Crawford | 5A | | 37 | 2 | | | 39 | 40,256 | 8,580,594 | 220,015 | 213 |
| MS-44 | Allegheny | 5A | | 46 | | | | 46 | 48,600 | 10,405,629 | 226,209 | 214 |
| MS-45 | Luzerne | 5A | | 36 | | | | 36 | 36,784 | 8,100,000 | 225,000 | 220 |
| MS-46 | Philadelphia | 4A | | 11 | 11 | 8 | | 30 | 39,650 | 8,957,527 | 298,584 | 226 |
| MS-47 | Allegheny | 5A | | 19 | 13 | 11 | | 43 | 41,797 | 9,558,272 | 222,285 | 229 |
| MS-48 | Philadelphia | 4A | | 46 | 4 | | | 50 | 48,315 | 11,197,257 | 223,945 | 232 |
| MS-49 | Philadelphia | 4A | 60 | | | | | 60 | 57,672 | 13,556,215 | 225,937 | 235 |
| MS-50 | Philadelphia | 4A | | 45 | | | | 45 | 48,351 | 11,428,626 | 253,969 | 236 |
| MS-51 | Philadelphia | 4A | | 37 | 10 | | | 47 | 50,527 | 12,095,152 | 257,344 | 239 |
| MS-52 | Philadelphia | 4A | | 32 | 6 | 6 | | 44 | 44,889 | 10,869,638 | 247,037 | 242 |
| MS-53 | Philadelphia | 4A | | 24 | 24,284 | 6,253,770 | | 24 | 24,284 | 6,253,770 | 260,574 | 258 |
| MS-54 | Allegheny | 5A | | 30 | 20 | | | 50 | 37,290 | 9,905,483 | 198,110 | 266 |
| MS-55 | Philadelphia | 4A | | 20 | 30 | | | 50 | 46,110 | 12,718,548 | 254,371 | 276 |
| MS-56 | Philadelphia | 4A | | 48 | | | | 48 | 45,000 | 14,294,705 | 297,806 | 318 |
| MS-57 | Philadelphia | 4A | | 46 | | | | 46 | 31,878 | 11,701,929 | 254,390 | 367 |

| Proj. No. | Total Units | Residnt'l Bldg. Area | \$/SF @ Applic | \$/SF @ Cost Cert | % Change |
|-----------|-------------|----------------------|----------------|-------------------|----------|
| 2015-443 | 51 | 62,509 | \$ 218 | \$ 186 | -15% |
| 2015-431 | 52 | 43,868 | \$ 296 | \$ 287 | -3% |
| 2015-436 | 23 | 28,205 | \$ 197 | \$ 193 | -2% |
| 2015-608 | 40 | 40,959 | \$ 158 | \$ 157 | -1% |
| 2015-810 | 35 | 61,504 | \$ 149 | \$ 149 | -1% |
| 2015-419 | 28 | 45,434 | \$ 178 | \$ 178 | 0% |
| 2015-809 | 37 | 48,768 | \$ 198 | \$ 199 | 1% |
| 2015-612 | 31 | 43,868 | \$ 161 | \$ 162 | 1% |
| 2015-804 | 88 | 79,650 | \$ 226 | \$ 228 | 1% |
| 2015-416 | 66 | 70,689 | \$ 153 | \$ 155 | 2% |
| 2015-619 | 34 | 39,447 | \$ 141 | \$ 145 | 3% |
| 2015-806 | 49 | 54,287 | \$ 148 | \$ 151 | 3% |
| 2015-466 | 40 | 53,652 | \$ 140 | \$ 144 | 3% |
| 2015-445 | 50 | 55,099 | \$ 220 | \$ 226 | 3% |
| 2015-439 | 53 | 51,690 | \$ 155 | \$ 163 | 5% |
| 2015-448 | 44 | 49,406 | \$ 169 | \$ 177 | 5% |
| 2015-449 | 61 | 63,949 | \$ 149 | \$ 157 | 5% |
| 2015-616 | 24 | 36,064 | \$ 150 | \$ 160 | 7% |
| 2015-620 | 53 | 82,070 | \$ 119 | \$ 129 | 8% |
| 2015-807 | 43 | 55,832 | \$ 170 | \$ 185 | 9% |
| 2015-614 | 45 | 53,021 | \$ 116 | \$ 128 | 10% |
| 2015-440 | 52 | 50,275 | \$ 213 | \$ 233 | 10% |
| 2015-415 | 56 | 56,250 | \$ 159 | \$ 176 | 10% |
| 2015-467 | 45 | 63,548 | \$ 139 | \$ 154 | 11% |
| 2015-459 | 12 | 16,796 | \$ 160 | \$ 181 | 13% |

Construction Cost Change from Application to Construction Completion



Hillcrest Senior Residences - Pittsburgh



Morningside Crossing - Pittsburgh

