



# National Association for Child Window Safety



*National Association for Child Window Safety  
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Memo from the Executive Director

It has come to my attention that while child safety is a motivating factor for us to make windows safe for children, the decisions to do so may require a much more materialistic motivation for a public housing or affordable rental housing provider. While it is an easy decision for new construction, the retrofitting of existing buildings may also require that the actual direct benefit in dollars must be greater than the original cost to do so.

Benefit-Cost Analysis (BCA) is an economic decision-making approach to predict those financial benefits of an action, as compared to its present cost. BCA is particularly useful in government and business to see whether a proposed project is worth doing. It involves comparing the total expected costs of an action against the total expected benefits, to see whether the benefits outweigh the costs, and by how much.

In the case of the retrofitting of window screens for the Many Rivers affordable housing project in Minneapolis there are known costs and observable benefits. From these observable and known values one can extrapolate what would be the BCA or economic impact of the retrofitting of window screens on similar buildings.

In July of 2006 after a child had fallen from one of the Many Rivers buildings it was decided to install mechanical “window stops” to limit to four inches window openings for the bottom window of all double hung window installed in the buildings. Concerned that a better solution was necessary to insure the safety of children occupying the 78 units in the two buildings the corporate management decided that a more effective solution was necessary. Since children had gone through existing screens, the solution seemed to be to have a much heavier screen such as those which HUD specified to protect window glass in some multi-unit housing.

After discovering that an Iowa company (Lansing Housing Products) was already actively producing such screens for projects in Chicago that company was commissioned to design and construct retrofit screens that would conform to the HUD Guide Specifications Section 08321 for a Light Type Security Screen - ANSI/SMA 600 specifications. Each screen was approximately

34 x 58, and built using .018 wire fabric material. It should also be noted that the screens required special design work to overcome shortcomings in the design of the buildings' existing Marvin windows. The total invoice from Lansing Housing Products for 300 screens was \$18,750.

During the retrofit of the 300 second floor and above windows with screens it was discovered that a large percentage of the window stops had been purposefully removed by the apartment occupants of the Many Rivers complex. This reinforced the original theory that the best method to protect children in those units was to have a passive, unobtrusive system that allowed occupants to fully open the lower windows of the units they occupied.

While child safety was the paramount motivation for retrofitting the Many Rivers windows it was soon discovered that a major additional benefit was the significant reduction of maintenance costs for windows in the buildings. Prior to the retrofitting the average monthly cost of repairing and replacing screens was \$200 to \$ 400 for each of the two Many Rivers buildings. After the retrofitting maintenance costs for windows were reduced to less than \$100.00 per year. In fact in the first four years subsequent to that retrofit only one screen needed replacing. That particular screen was vandalized with a knife by a person attempting (but failing) to burglarize an apartment in the complex. While a small proportion of the total operating cost, this is not an insignificant factor in the continuing sustainability of this or any other affordable housing complex.

It should be noted that these numbers do not include the social impact or the other possible financial costs that have also been realized from the prevention of other window falls, and the insurance deductibles that might have resulted. For example in the two child window falls previous to the retrofitting the insurance deductible cost was \$10,000 each for a total of \$20,000. That amount alone was greater than the total cost for the security screens that were subsequently installed.

Respectfully,

Jim Graham, Executive Director  
National Association for Child Window Safety

The following table demonstrates only the direct cost and benefit of such a retrofit.

**Maintenance cost of windows and new Safety Screens over 10 years**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total cost
Safety Screens	\$18,750.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Maintenance Cost	\$392.00	\$392.00	\$392.00	\$392.00	\$392.00	\$392.00	\$392.00	\$392.00	\$392.00	\$392.00	\$3,920.00
											\$22,670.00

Amt Window Per Yr	1875
Maint. Cost Per Yr	392

**Maintenance cost of old windows and screens over 10 years**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total cost
Amt Window	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Maint. Cost	\$4,800.00	\$4,800.00	\$4,800.00	\$4,800.00	\$4,800.00	\$4,800.00	\$4,800.00	\$4,800.00	\$4,800.00	\$4,800.00	\$48,000.00
	\$4,800.00	\$9,600.00	\$14,400.00	\$19,200.00	\$24,000.00	\$28,800.00	\$33,600.00	\$38,400.00	\$43,200.00	\$48,000.00	

<u>Year</u>	<u>Month</u>	
4	1	\$19,600
4	2	\$20,000
4	3	\$20,400
4	4	\$20,800
4	5	\$21,200
4	6	\$21,600
4	7	\$22,000
4	8	\$22,400
4	9	\$22,800 *

Average maint cost per month \$400

**\*Window screen retrofit pays for itself in 4 years and 9 months**