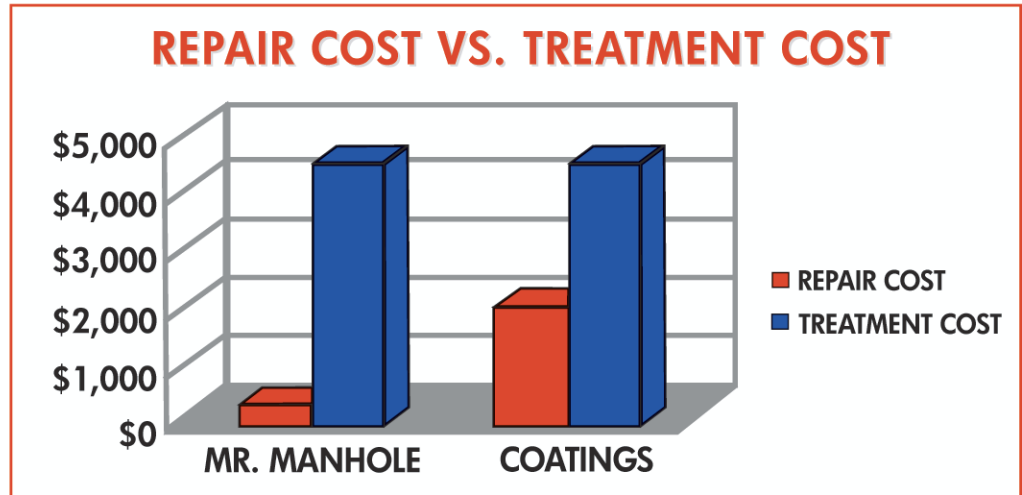


# BENEFITS OF CHIMNEY REPLACEMENT

It is an accepted fact that fifty percent or more of manhole leakage occurs at the chimney section of manholes. It is widely known that the aging infrastructure is full of collapsed or out-of-adjustment frames and lids causing annoying bumps and sometimes outright traffic hazards.

All interior patches such as: interior chimney seals; cementitious coatings; epoxy coatings; and the like, fall short of a total chimney section replacement. Until the Mr. Manhole system was created, no method existed to economically and expeditiously replace the entire manhole chimney section. The Mr. Manhole system gives you a leak free, gas proof, perfectly road level, guaranteed fix that can be done by a municipalities crew for about the same price as a chimney seal installation. When planning strategies for reducing inflow and in-



filtration for a given area, finances are always a factor.

We must strive to extract the most infiltration reduction from each dollar spent. If you analyze the manhole structure as a vertical unit you will see that the chimney section represents about one tenth of the total manhole

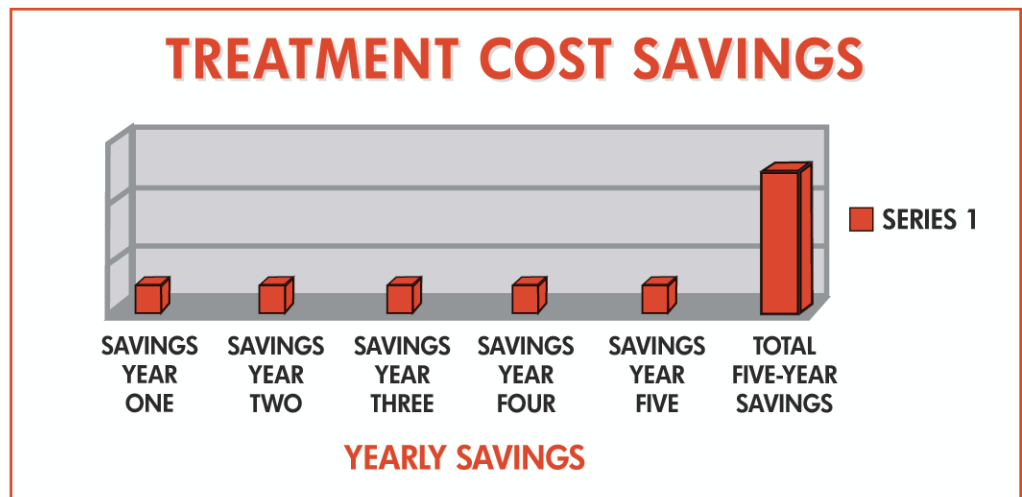
height on average, but it is responsible for approximately fifty percent of the total manhole leakage.

It is comparatively more cost effective to repair the chimney than to repair the lower structure. The Mr. Manhole system will allow you to get much more for every dollar spent.

When formulating an overall I & I reduction strategy it would be much more cost effective to replace all the manhole chimney sections in a system first, then assess each cone and barrel structure and remediate on a per manhole basis. Because of the speed with which the chimney sections can be replaced with the new Mr. Manhole system there will be a quick reduction of infiltration for a relatively small investment.

On the Mr. Manhole website you can see the immediate savings in treatment cost will fund other capital improvements such as sewer relining. This can be demonstrated by using the municipality savings calculator on the purchase page at [www.mrmanhole.com](http://www.mrmanhole.com).

Public perception is another important factor for any public entity to consider and the Mr. Manhole repair will



rapidly win public support due to the speed of the repair and the smooth feel when driving over the end product. The treatment cost savings from chimney section replacement, immediately and in the out years, will fund other I & I remediation.

Considering these factors, it be-

comes obvious chimney section rebuilding must be the primary strategy in manhole repair with all other efforts secondary.

Other efforts will be partially or fully funded by the treatment savings generated by the chimney replacement.

# ENGINEERING INFORMATION

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The Mr. Manhole system has been engineered to stand up to traffic and perform for many years as evidenced by the guarantee. This system is capable of withstanding loads in excess of four times that experienced by an HS20 Loading, immediately upon completion of the repair. After that, the system continues to gain more load carrying capabilities as the concrete cures.

The final product is one, which exceeds the load carrying capabilities of the manhole itself. The Mr. Manhole

system is designed to help you rapidly decrease I & I problems. It is engineered to be a solution to the chimney I & I problems, not a temporary patch. Utilizing this system will help you free-up much needed space in treatment facilities that are nearing capacity by developing flow trade-off credits. It is an economical and viable solution to eliminate costly overflow problems and the environmental liability that comes with overflows.

Much time has been spent preparing detailed engineering specifica-

tions that will govern the manhole chimney reconstruction and control the quality of the end product. Sample specifications are available on the website at the web address identified above.

These specifications include ASTM Standards for the materials to be used in this process. These sample specifications are available in an AutoCAD format for use in creating your own agency specific specifications. Our engineering staff is available to assist you in this process.



[www.mrmanhole.com](http://www.mrmanhole.com)