

July 2020 Colorado Springs City Council Power Overreach

- On July 14, 2020, the Colorado Springs City Council will be voting on an “Emergency Ordinance” to prosecute anyone not wearing a mask while in public
- This ordinance will allow fines up to \$2500, and imprisonment up to 189 days
- The city council is leveraging the current acute public concern over a virus to shirk their responsibility of securing the liberty of Colorado Springs residents, and instead directly *taking that liberty away!*
- **The idea that we can sanitize an area of all possible health risks is nonsense,** but when people have the ability to assess their own risks and act accordingly, we all come out ahead.
 - Those at risk should be allowed to wear an N95, N99, or N100 mask with an exhaust valve so they can protect themselves to the greatest extent without having to worry about CO₂ buildup or other side effects of excessive respiratory restriction.
 - Those who know they have problems remembering to not touch their face, should be allowed to wear the type of mask in the proposed ordinance, even though they know the weave of such masks is way too coarse to significantly trap COVID-19 particles.
 - Those who know they touch their face *way more* with a mask on, and are concerned about the bacteria build up of such masks should be allowed to walk around mask free.
 - People aware that many microorganisms, including COVID particles, are quickly terminated by sunlight, may choose to not wear a mask.
 - Some decide to ride mountain bikes, while to others that activity is too dangerous. Some take their newborn baby out soon after birth to show all of their friends, while others are more careful to keep the baby at home while its immune system develops. **As Americans, we all have the freedom to assess our own risks and act accordingly. Those who are worried about COVID-19 may choose to be more careful, but a one size fits all policy for the city may do more harm than good.**

We need your help to kill this. Please participate:

- City Council work session: Monday July 13, 10:00am
- City Council voting meeting: Tuesday July 14, 10:00 am
@coscitycouncil; or dial in: +1 720-617-3426, Meeting number: 156 778 281#
- City Council email address: AllCouncil@coloradosprings.gov

Some more details with references

The only real reference necessary is the second paragraph of the Declaration of Independence which tells us the self-evident truth that the purpose of the government is to secure the unalienable rights of the people. When the government fails to secure these rights, they have not done their job. When they directly take one of these rights away, in this case liberty, they have become the perpetrator. This is the heart of the problem. The remaining references merely show how this particular power overreach may do more harm than good in addressing the COVID-19 health concern.

The text of the proposed ordinance is: Emerg_Face_Covering-ORD-2020-07-10(003).pdf at:

<https://coloradosprings.legistar.com/View.ashx?M=F&ID=8663827&GUID=49F54AF8-8C33-4A06-AD18-F087FDE81490>

Notice that part of the text states that the face covering should “allow for breathing without restriction”, which is impossible even with the coarser weaves shown in the pore size reference below.

If you want to get an idea of how bacteria builds up on surgical masks in a controlled environment, look at the following. Remember, these are products made specifically for use in surgery, not just some cloth cut to fit one’s face. They are also used with a strict protocol, where things like face touching is not allowed:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6037910/>

If you have doubt that the weave of fabrics in general are too coarse to trap a 100nm particle, you can look at this study showing a technique for evaluating pore size where they gave five examples of different materials. Also note how restrictive to breathing the material becomes with the tighter weaves:

https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwiUs_m2mavqAhUDV80KHTW4BB8QFjAAegQIAhAB&url=https%3A%2F%2Fwww.hilarispublisher.com%2Fopen-access%2Fdetermination-of-pore-size-porosity-and-pore-size-distribution-of-woven-structures-by-image-analysis-techniques-2165-8064-1000314.pdf&usg=AOvVaw11Ux0VKZ1wHETjLJyCd7Cx

If you have trouble resolving the above link, search for: Ragab, et. al. “Determination of Pore Size, Porosity and Pore Size Distribution of Woven Structures by Image Analysis Techniques”

This one gives you an idea of the COVID-19 particle size, and that it is much smaller than the pore sizes shown in the above article:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7045880/>

For those looking for the best protection *for themselves*, the following article shows that when an N95 mask is sealed properly it can provide protection for particles well below the 300nm specification size. One would speculate N99 and N100 masks would demonstrate even better protection for the wearer. But these masks are not made to keep particles in. Anyone who has used them extensively, knows the seal doesn’t work as well that direction. The study also shows that surgical masks do not provide anywhere close to the same protection as the N95 masks even with the silicone sealant used in the study. I’m

not going to pretend the result will be better the way they are typically used, when I can feel air pouring out the sides of surgical masks in use, and also fogging up my glasses.

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.488.4644&rep=rep1&type=pdf>

The surgical mask results of the above study should not be a surprise, since the products were not designed to stop such small particles. Here is a typical specification showing that they were designed to filter bacteria with a mean particle size of 2.7 microns:

<https://www.cleanroomsupply.com/3m-tie-on-surgical-mask-1818.html>

The N95/Surgical mask study with the artificial silicone seal above showed significantly reduced filtration as the air flow was increased from 30 to 80 L/min, but the following reference shows a cough is in the much higher 360-400 L/min range:

<https://www.atsjournals.org/doi/full/10.1513/AnnalsATS.201406-2640C>

So even if we all glued N95 respirators to our face, a cough or sneeze could make the N95 ineffective for keeping COVID-19 particles from entering the world around us.

The above should make it clear that the “keep all virus particles completely out of our city” is like trying to warm up all outdoors when we are cold instead of putting on a coat. With that in mind, we can open up our minds to the most effective way to protect the most vulnerable and the most careful. One step in this is to note that N95 respirators with exhalation valves are effective for the wearer. It is important to remember that all of the devices used in the study below were tested with atypical sealing and strict control. Haphazard use could give much worse, and possibly negative results:

<https://academic.oup.com/annweh/article/52/3/177/312528>

Anyone who has compared respirators with and without an exhalation valve knows that the valve units are much more comfortable to use under exertion, so we would easily speculate they may be healthier for those with respiratory issues. Coincidentally, people with respiratory issues are rumored to be part of the group vulnerable to COVID-19. Wouldn't it be a shame if this ordinance caused more of a problem because exhalation valves would not be allowed?

The supply of good respirators has been running low. If more people understand the inability of normal cloth and even surgical masks to stop COVID-19 particles, and they buy into the “change the environment” argument, how will the ability of those who really need N95 masks change? We could easily push ourselves into causing more deaths.