



Massachusetts Water Resources Authority

Presentation to the

Wastewater Advisory Committee

MWRA's Response to COVID

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Immediate Actions

- On Saturday, March 14, Senior Staff convened to update a list of “core functions”
- The next week, all office staff were sent home to telework, if possible
- Maintenance crews were put on standby rotations
- Treatment plant and other critical staff continued to report to work, under CDC safety guidelines





Utilized Existing Pandemic Response Plan

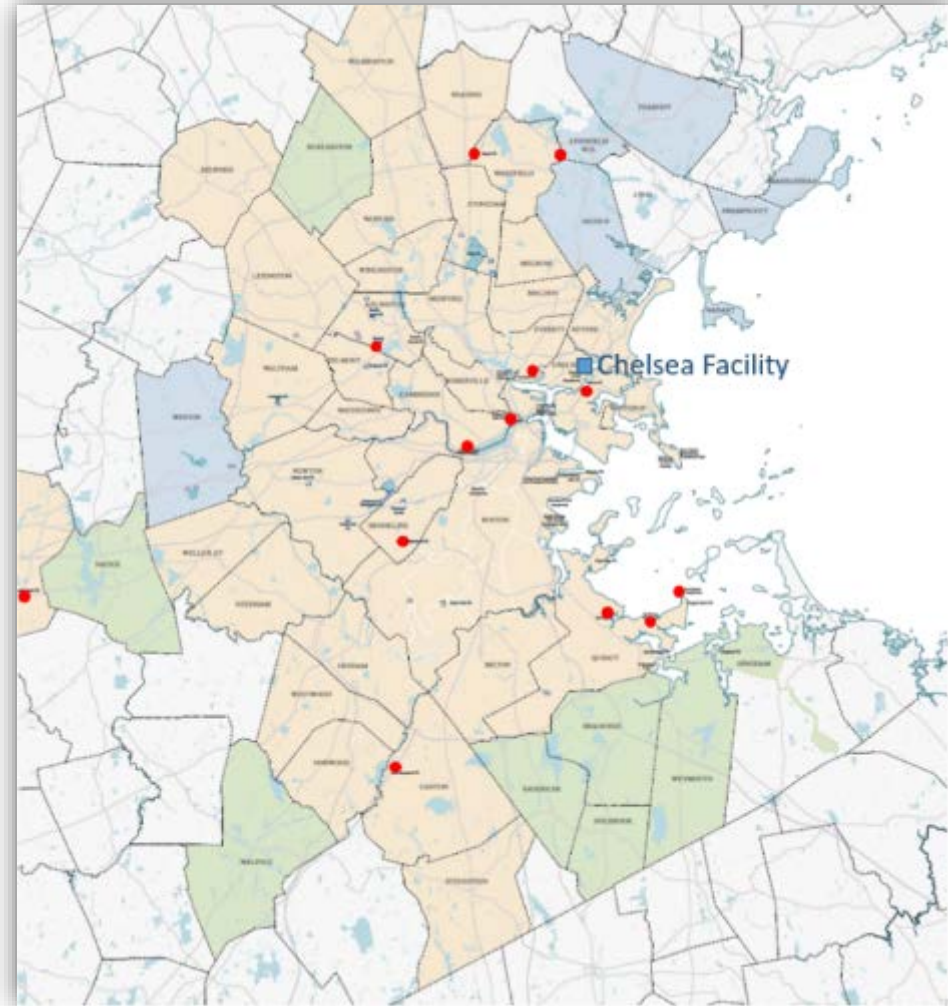
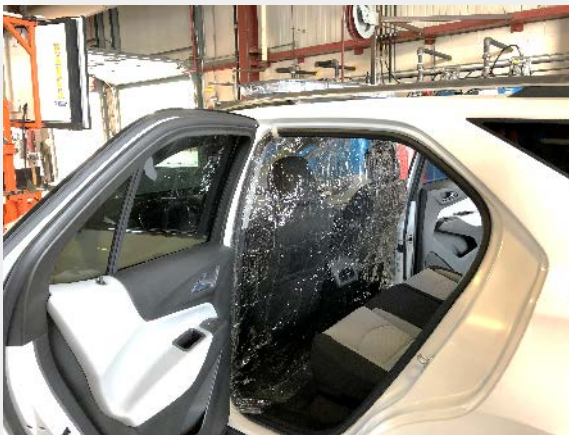
- MWRA developed a Pandemic Response Plan in 2003 to ensure the continuity of operations and safety of staff
- The Plan was used as a starting point when COVID hit and is updated on an ongoing basis applying lessons learned
- Part of the Plan included a stockpile of PPE, which was regularly rotated, putting us in a good position at the start of the pandemic

Overview - MWRA Pandemic Response Approach			
	MWRA Pandemic Response Level	Trigger Mechanism	General Response Measure
<p>Is this disease severe enough to disrupt MWRA operations?</p> <p>↓</p> <p>Is it spreading easily from person to person?</p>	MWRA Level 0	Normal risks - there are normally sporadic cases of novel disease occurring throughout the world <u>without</u> evidence of efficient human to human transmission	Update EAP as needed
<p>↓</p> <p>Are there outbreaks in multiple parts of the world?</p>	MWRA Level 1	Increased human to human transmission of a novel pathogen producing high clinical severity; OR a pandemic is declared for a low severity pathogen	<ul style="list-style-type: none"> Review EAP triggers relative to the transmission and severity of the disease Review critical supply and staffing requirements Investigate the behavior of the pathogen relative to water and wastewater and enhance disinfection
<p>↓</p> <p>Are there outbreaks in Massachusetts?</p>	MWRA Level 2	Sustained transmission of a high severity, high accessibility novel pathogen is confirmed in multiple areas somewhere in the world OR a pandemic for a low severity pathogen arrives in the U.S.	<ul style="list-style-type: none"> Determine when to begin aggressive procurement of critical materials and prepare for reduced staff availability Review current information on water and wastewater as an exposure source
<p>↓</p> <p>Are there impacts to MWRA operations?</p>	MWRA Level 3	Sustained transmission of a high severity, high accessibility novel pathogen is confirmed in the MWRA area and/or MA DPH declares a Pandemic related Public Health Emergency	<ul style="list-style-type: none"> Manage operations to provide mission critical services Adjust staff protection guidelines as appropriate
<p>↓</p> <p>Are things returning to normal?</p>	MWRA Level 4	Abatement rates and interdependency issues impact critical operations	Drop lower priority functions as necessary
<p>↓</p> <p>Prepare for another wave as needed</p>	MWRA Level 5	Workforce returns to lesser impact levels	Restores functions as possible



Operations and Maintenance Staff

- Field crews and plant staff have staggered start times
- Chelsea crews are utilizing remote locations to muster
- One person per vehicle, but piloting multi-person vehicles with barriers



Remote Mustering Locations



Operations and Maintenance Staff

- As staff returned to work, full compliance with the Commonwealth of Massachusetts Re-Opening Plan safety requirements and CDC COVID-19 guidance
- PPE required at all times and all employees self-certifying that they are healthy





Operations and Maintenance Staff

- Procedures in place for community staff to drop off water quality samples safely





Contract Tracing and Deep Cleaning

- In the event that an employee tests positive for COVID, contact tracing and notifications are done immediately
- Work area and common areas are deep cleaned by outside vendor





Impact on Construction Projects

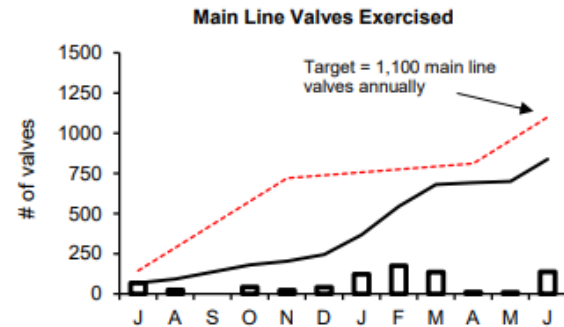
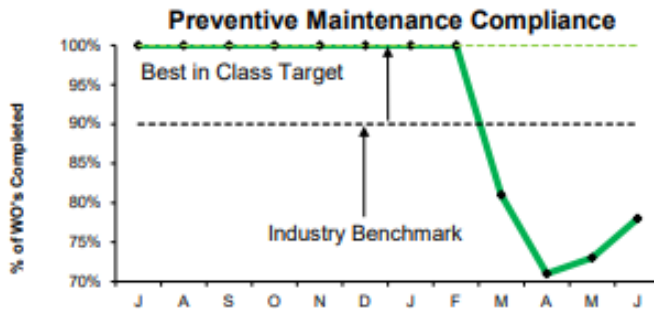
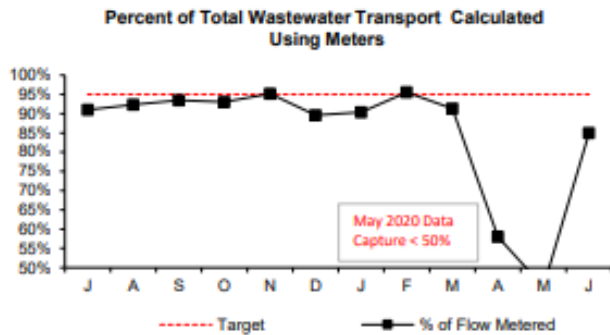
- MWRA and its contractors had to quickly adopt the Governor's mandates for safe construction sites, including training, hand washing stations and daily self health certifications



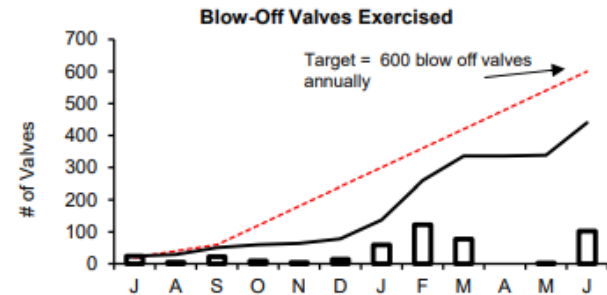


Effects of COVID on Maintenance Metrics

- Routine maintenance dropped during the 4th quarter of FY20, but is starting to recover



During the month of June FY20, 137 main line valves were exercised. The total exercised for the fiscal year to date is 838. Below YTD target due to high priority CIP project (WASM 1) and Covid 19.

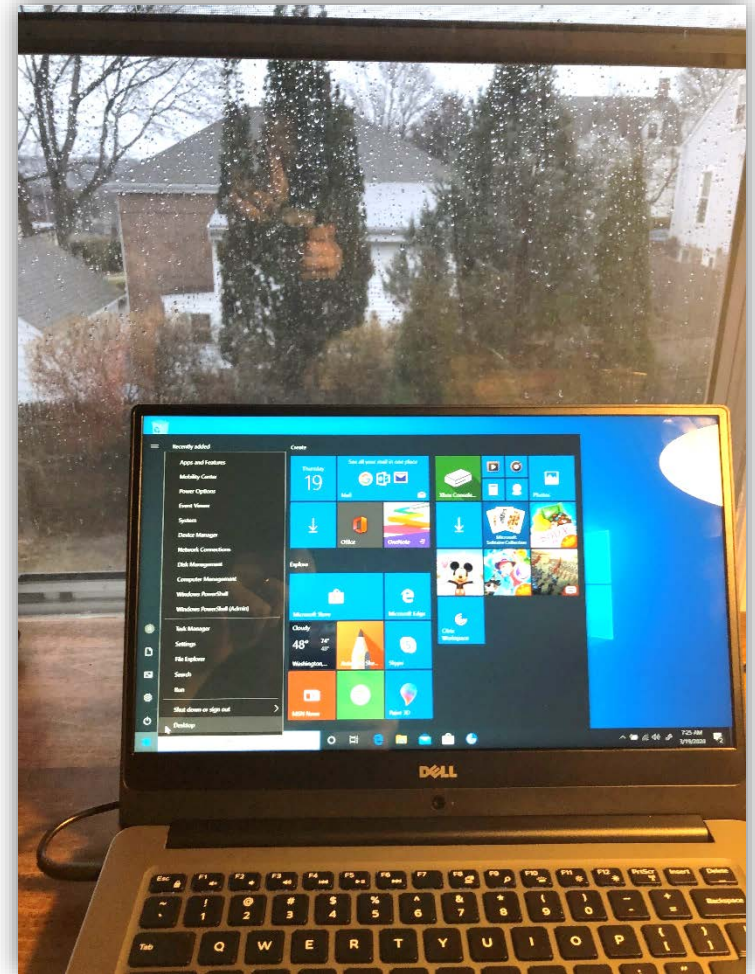


During the month of June FY20, 102 blow off valves were exercised. The total exercised for the fiscal year to date is 440. Below YTD target due to high priority CIP project (WASM 1) and Covid 19.



Office Staff

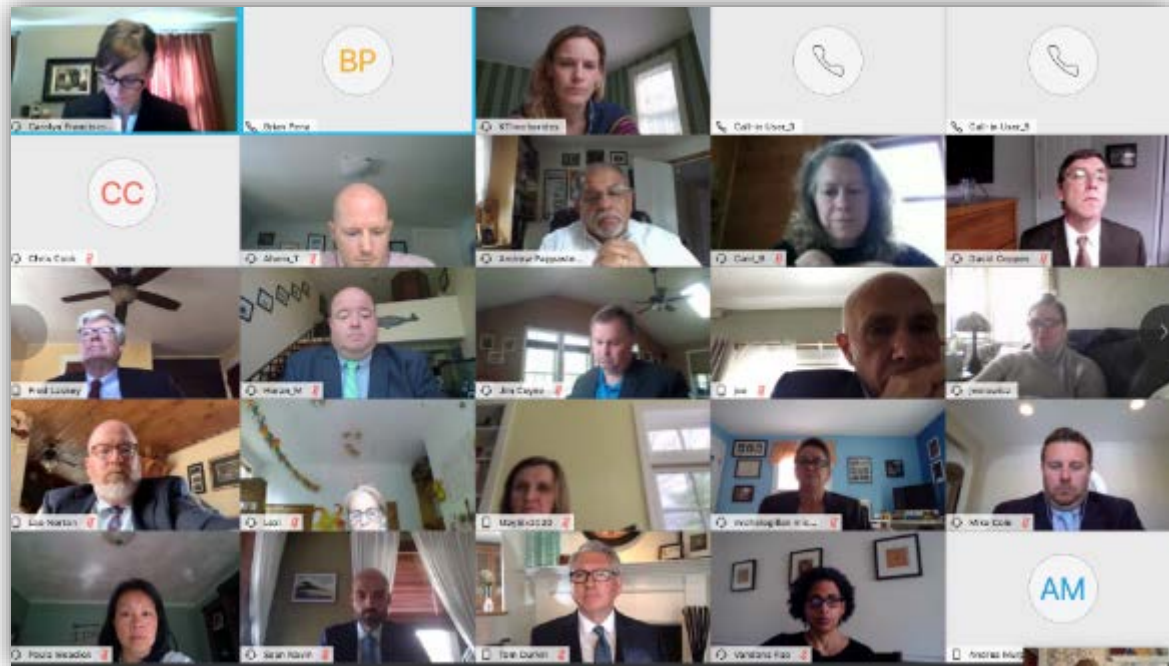
- Over 400 financial, administration, engineering, planning and support staff are teleworking under a new Telework Policy
- No face-to-face meetings
- Visitors to MWRA facilities very limited - and must self-certify that they are healthy





Virtual Meetings

- Like everyone else, all MWRA meetings are being held virtually
- All hiring done remotely
- Since March, MWRA Board of Directors meetings have been held virtually





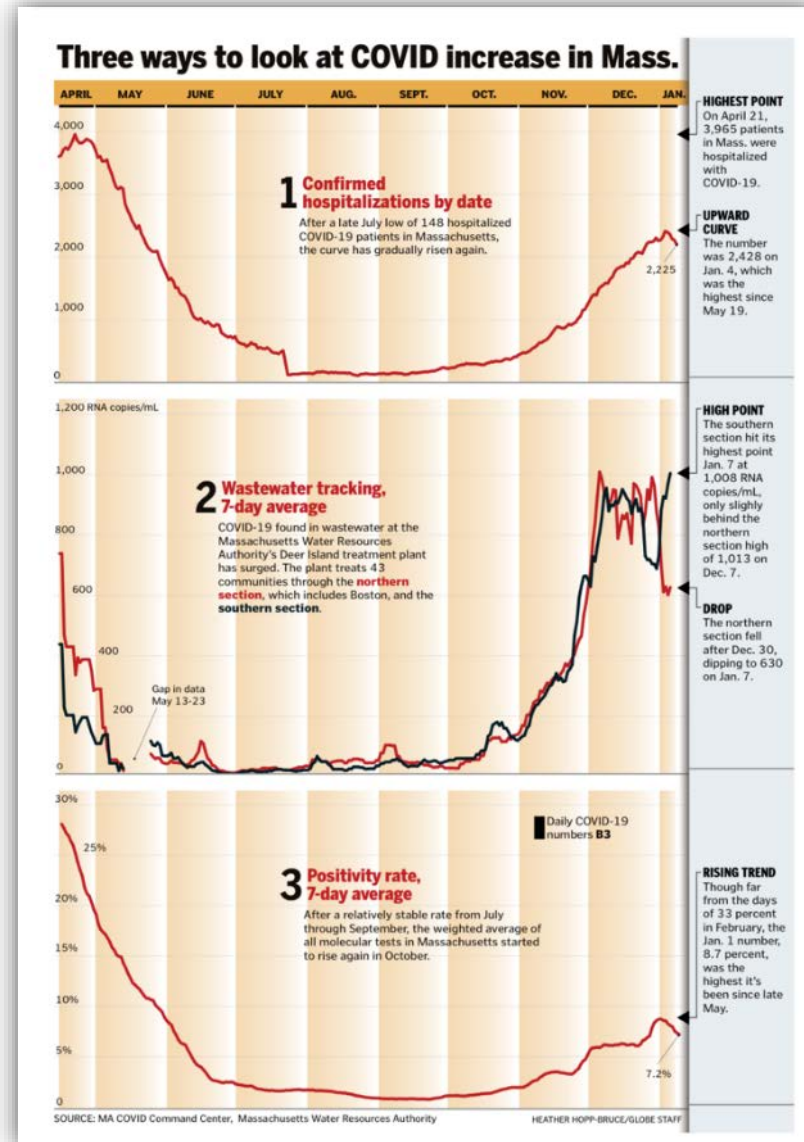
Installed Protective Barriers and Signage (Lots of Signage)





COVID Wastewater Testing

- Since the pandemic began, MWRA has been working with Biobot Analytics on sampling wastewater at Deer Island to track the amount of COVID in the north and south systems as an additional tool for the public health community
- Testing results are posted on MWRA's website
- The program has garnered local and national media attention and the Boston Globe uses it as one of the key graphs to watch



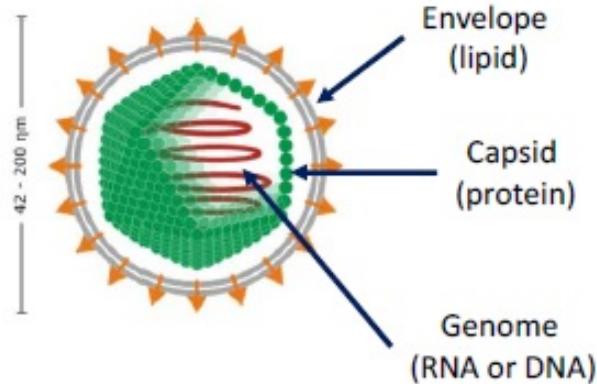


Groups Around the World are working to use Wastewater as a Predictor of COVID

- International Utilities/Research Groups
 - Miami, Detroit, Portland, New Haven
 - France, Netherlands, Australia, Spain
- MWRA has provided samples to:
 - Biobot Analytics/MIT
 - Stanford/UMichigan/Tufts national study
 - Northeastern
 - ActiveSignal
 - UMASS Amherst
 - NIH/CDC
- MWRA has worked with Biobot/MIT to co-author two additional papers



PCR Detection Does Not Mean Virus Is Infectious

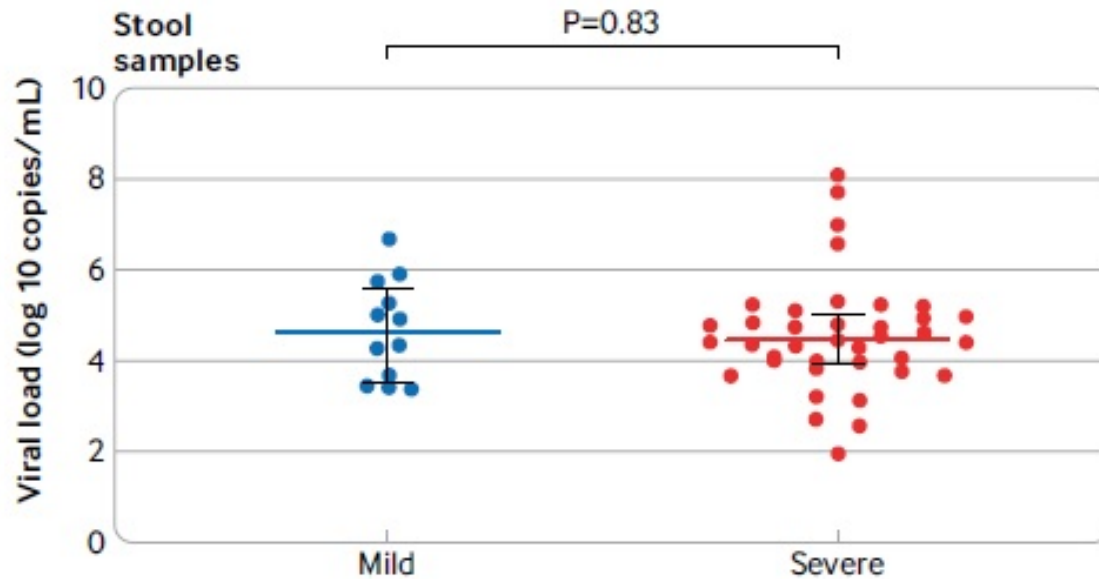


- Culture of live virus requires an intact virus particle
- PCR detects specific regions of the viral genome
 - Damage to the envelope, capsid or genome does not necessarily prevent PCR detection





Calibrating the Viral Signal is Difficult



- Fecal shedding by patients can range from 100 copies/g to 100,000,000 copies/g
- This complicates the conversion from how much viral RNA is present to how many people that signal represents, along with other variables at treatment plants (like rainfall)



Timeline of Biobot Deer Island Study

- Started in March with a preliminary request for samples
- Follow up included samples archived sample from Deer Island from January and February, and daily samples for early March, and one to two weekly samples through April
- Concurrently Biobot worked with Boston Water and Sewer Commission to analyze neighborhood results
- Current program:
 - Samples 3 times per week (or more) from Deer Island
 - Increase to daily if it looks like there is a change
 - Results are shared with the state Command Center as received
- Results are available at <http://www.mwra.com/biobot/biobotdata.htm>



On-Site COVID Testing

- In December, MWRA began providing weekly on-site testing at three locations for employees
- The response has been excellent and has helped to stop the spread among staff





Vaccines

- MWRA has been working to try to move critical water and wastewater workers up on the distribution list
- Currently exploring options for on-site staff vaccinations

Facts about COVID-19 vaccines


Vaccines (shots) are one of the tools we have to fight the COVID-19 pandemic.

To stop this pandemic, we need to use all of our prevention tools. Vaccines are one of the most effective tools to protect your health and prevent disease. Vaccines work with your body's natural defenses so **your body will be ready to fight the virus**, if you are exposed (also called immunity). Other steps, like wearing a mask that covers your nose and mouth and staying at least 6 feet away from other people you don't live with, also help stop the spread of COVID-19.

Studies show that **COVID-19 vaccines are very effective at keeping you from getting COVID-19**. Experts also think that getting a COVID-19 vaccine may help keep you from getting seriously ill even if you do get COVID-19. These vaccines cannot give you the disease itself.

The vaccines are safe. The U.S. vaccine safety system makes sure that all vaccines are as safe as possible. All the COVID-19 vaccines that are being used have gone through the same safety tests and meet the same standards as any other vaccines produced through the years. A system in place across the entire country that allows CDC to watch for safety issues and make sure the vaccines stay safe.

Different types of COVID-19 vaccines will be available. Most of these vaccines are given in two shots, one at a time and spaced apart. The first shot gets your body ready. The second shot is given at least three weeks later to make sure you have full protection. If you are told you need two shots, make sure that you get both of them. The vaccines may work in slightly different ways, but all types of the vaccines will help protect you.



www.cdc.gov/coronavirus/vaccines



Future Challenges: What Will The "New Normal" Look Like?

- Child and adult care issues
- Teleworking going forward
- In-person training vs on-line
- New technologies
- Staffing levels
- Future space needs