



PANDEMIC AND THE FUTURE

From Darkness to Light in the Water Sector

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Introduction

Throughout history, great challenges often reveal the best in human spirit and ingenuity. At Moonshot Missions, we believe the impact of the Coronavirus pandemic upon on the water industry will be matched by the indomitable spirit and creativity of water leaders. Even during our current crisis, solutions adopted by necessity now will lead to remarkable permanent and extraordinary changes in how we protect our water workforce and infrastructure to preserve and deliver our precious water resources.

Challenges from this pandemic are not new in and of themselves, but they have manifested to an unprecedented degree and projected duration. The purpose of this article is to present the good and hopeful news that solutions we are implementing by necessity today can help achieve permanent improvements for the future. In our view, the challenges and opportunities fit into three themes:

1. Resilience. The pandemic is the most recent crisis to challenge utilities, coming on the heels of hurricanes, droughts, firestorms and similar climate change related weather events. Moonshot Missions identifies capital improvements that when implemented, can reduce the utility's vulnerability to a recurrence of a COVID-19 event or any major natural and manmade disaster as well as reduce the severity and cost of the response and recovery.
2. Workforce. The pandemic is requiring utilities to implement staffing reductions, exacerbating the shortfall in employees already occurring through the "silver tsunami" of employees retiring now and in coming years. Moonshot Missions identifies improvements that will lessen the utility's vulnerability to both permanent and temporary reductions in the workforce, while being mindful that steps taken respect existing agreements and union membership.
3. Affordability. The pandemic is expected to result in a precipitous drop in utility revenues which may require rate increases that accentuate concerns about affordability and equity. Moonshot Missions identifies methods to reduce costs and/or generate new income to manage revenue shortfalls, thereby reducing the corresponding rate burden on customers.

If you are interested in learning more about these ideas our Moonshot Missions team would be delighted to hear from you. Moonshot Missions is a non-profit devoted to helping utilities identify, customize and implement strategies to improve performance and reduce costs with an emphasis on utilities in underserved communities. **For more information, or to inquire about our assistance, please visit our website at www.moonshotmissions.org, email us at info@moonshotmissions.org or call us at: 202-256-1981.**

Challenges and Solutions

The Coronavirus pandemic has had dreadful consequences on the thousands of people who have painfully lost their jobs. People still working to make a living, and often playing critical roles in protecting public health, shoulder the tremendous physical and emotional burden of risking both their own and their family's precious lives.

These courageous people include the brave men and women who deliver safe drinking water and protect our waterways. The utilities that comprise our water sector have done and continue to do a heroic job in the face of this pandemic:

- To flatten the curve, utilities have sent most employees to work from home, leaving on-site work solely to those who are essential for operations and service response.
- To protect the workforce, utilities have extended weekend and evening shifts, reduced work crews and postponed non-essential work.
- To support public health and ensure access to water to remain healthy and wash their hands, utilities have suspended shutoffs and restored water service to those previously cut-off.
- To reduce the economic burden on customers, many of whom have lost their jobs, utilities have waived interest and late charges and instituted generous payment plans.

Our water sector utilities and associations have done excellent work in distributing information so that everyone benefits from every good idea and practice. To this end, Moonshot Missions has developed a compendium of best practices to deal with the immediate coronavirus crisis ([link here](#)). All of us, and especially those on the front lines at our treatment plants and water distribution and sewer collection systems, should feel proud of the way our sector has risen to the occasion. We know in the days ahead, this critical work will likely continue with further adaptations to existing practices.

Certainly most, if not all utility managers, will be thinking about these longer-term issues as they continue to grapple with the current crisis. Utilities must improve their workforce and infrastructure resiliency in order to reduce their vulnerability to a recurrence of the pandemic or a similar sort of crisis. Moonshot Missions is here to help. By pooling together in one place the innovative ideas being voiced by our industry's leaders, we can help utilities shape projects and adopt crucial tools.

We present the following solutions that fall into one or more of the themes listed on page 1 to help utilities reduce their vulnerability to recurrence of crises like COVID-19 and implement projects and programs that will offset projected revenue shortfalls by reducing operating costs and/or generating new revenue.

Cost Reductions:

- Implementation of energy conservation measures to reduce energy usage.
- Implementation of green energy measures, such as solar panels and combined heat and power projects in order to reduce energy costs and improve resiliency.

- Optimization of biosolids handling practices in order to reduce disposal costs and improve environmental performance.
- Implementation of asset management programs and preventative maintenance programs in order to reduce maintenance costs, reduce emergency costs and improve resiliency.
- Implementation of an ISO 14001 efficiency program to ensure that utilities prioritize cost efficiency and optimize environmental performance in every decision.
- Utilization of the State Revolving Fund program to reduce the annual debt service associated with capital improvements.

Revenue Enhancements:

- Reduction of nonrevenue water to the maximum extent possible by reducing leaks and minimizing unbilled and underbilled accounts.
- Charging connection fees where appropriate and legally allowed.
- Charging stormwater fees, in the case of combined sewer utilities, in order to more fairly apportion the actual costs of conveyance and treatment in a combined sewer utility.

Staffing Resiliency:

- Implementation of automation and cross training in order to reduce staffing levels, especially non-mission critical staffing.
- Building an expanded roster of mission critical employees.
- Identification of backup external sources of manpower on an emergency or as-needed basis.

Operational Resiliency:

- Ensure that all remote locations, such as unmanned pumping stations, have both optimal annunciator capacity to report internal problems and optimal telemetry to report such problems back to the main control center.
- Improve telemetry and communications at manned facilities, such as the water treatment plant, so that more ground can be covered with fewer staff.
- Installation of meters/monitors for critical process areas that report critical data back to the main control center in real time.

- Installation of cameras in critical areas so, during manpower emergencies, those facilities can be monitored remotely.
- Optimization of remote, read only access for operators at home, so that they can help monitor process units remotely then communicate instructions to on-site staff. Such access should be read only in the event of outside hacking.

Moonshot Missions can help utilities identify and obtain creative and suitable funding options for ideas we propose. Our goal is to offer peer to peer guidance from day one of the process with a utility through implementation until they achieve their Moonshot!

Conclusion

Currently and rightly, all utility managers are focused on day-to-day challenges such as having to reduce their manpower to ensure they maintain optimal water and wastewater service to their customers. Utilities are also beginning to recognize the reductions in revenue due to the economic crisis during and resulting from the COVID-19 pandemic.

There is hope! Our Moonshot Missions team has not only identified solutions that can help utilities combat their current struggles, but more importantly, we have been actively contemplating the significant issues utilities will face in the aftermath of this pandemic. The good news is that implementing some or all of these cost saving and revenue generating measures will help utilities manage and operate within this crisis and others, help offset the anticipated loss of revenue and permanently reduce ongoing operating costs in the future. These proven strategies and tools offer utilities a clear and smooth recovery path, enabling them to emerge from the darkness back to the light.

About Moonshot Missions

Moonshot Missions is a non-profit devoted to helping utilities identify, customize and implement strategies to improve performance and reduce costs, with an emphasis on utilities in underserved communities. **For more information, or to inquire about our assistance or to donate to help with our work, please visit our website at www.moonshotmissions.org, email us at info@moonshotmissions.org or call us at: 202-256-1981.**

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