

# The response of HAMBURG WASSER to COVID-19 and lessons learned

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## Abstract

This paper offers insights and shares the experiences that HAMBURG WASSER – the second biggest German water and wastewater utility – has made in response to the COVID-19 pandemic, up to August 2020.

## Introduction

HAMBURG WASSER is a group of publicly-owned water and wastewater utilities serving more than two million consumers in the metropolitan region of Hamburg, Germany. The group includes renewable energy and consulting subsidiaries.

Prior to the COVID-19 pandemic, HAMBURG WASSER had created a variety of very specific emergency and crisis management protocols, including responses to coliform bacterial infections in the network, storm tides, and terrorist threats.

An emergency plan has also existed for pandemic situations consisting of three main aspects: internal management and responsibilities in the event of a pandemic; concrete proposals for measures to reduce the incidence of infection and to protect vulnerable process areas; and minimum staffing requirements to maintain adequate levels of water supply and sewage disposal.

Capacity building of crisis management team members is a central instrument of our strategy, with regular training and testing of structures and procedures to anticipate specific scenarios. At the end of 2019, HAMBURG WASSER conducted just such a joint team exercise, in cooperation with the electricity and gas network operators in Hamburg, to strengthen networking between the infrastructure operators in case of a crisis.

## **Emergency Management During COVID-19**

Shortly before the first coronavirus case in Hamburg was identified, it was decided to set up a cross-divisional emergency committee. HAMBURG WASSER considered the pandemic situation as an “emergency” for the company rather than a “crisis”. However, the crisis management tools were applied. Due to the pandemic scenario, all meetings of the emergency committee were conducted exclusively via telephone and video conference.

The first meetings were a test run in terms of digital communication, as well as a first attempt to grasp the extent of the work ahead. The structural preparations and training of the past few years proved to have paid off and were continuously updated and revised. Responsibilities and communication structures were defined and working methods were coordinated.

Including vacation replacements, 23 people were part of the emergency committee, from different departments, as follows:

- Head of Operation
- Coordination Team
- Staff and Health Team
- Emergency Operation Team
- Materials Management Team
- Communication Team
- Information Technology Team

The focus of the emergency committee was to centralize the collection of information, to assess the situation, to identify critical developments, and to prepare responses, all under the motto of “staying ahead of the development”.

Major problems were discussed in the emergency committee and secondary issues were delegated. Proposed solutions were prepared in smaller working groups and presented to the emergency committee for decision making. The head of operation has the authority for final decisions in the emergency committee and keeps close contact with the two CEOs and the staff councils.

The following practices have proven to be useful for the efficiency of the emergency committee:

- Daily meetings
- Tracking of the external situation in Hamburg, Germany and other countries
- Tracking of the internal situation, especially of personnel, by means of a regular query in the operating areas
- Fixed and standardized agenda and good preparation of the meetings

## **Collaboration with Others**

Contacts with other water suppliers and network operators were established at various levels. Best practice information was exchanged with bilateral and informal contacts. A regular exchange took place with the company doctors of two other public operators from the heating network and the electricity network. And given that HAMBURG WASSER does not have the necessary expertise to assess the virus situation, we rely on the assessments and recommendations of the German Robert Koch Institute and the Federal Ministry of Health.

At the CEO level, telephone conferences of the public operators in Hamburg took place regularly under the direction of the supervisory authority. During the pandemic, the need for protective equipment (mainly special protective masks such as FFP2 or FFP3 masks) was regularly discussed, prioritized and centrally provided by the supervisory authority.

## **Measures Taken to Ensure Access to Services**

It quickly became clear that the pandemic would not be over in a few weeks and that the situation would continue to worsen. Accordingly, the aim was to maintain the "normal operation mode" as much as possible under consideration of special hygiene rules.

The following strategic action lines were developed by the emergency committee:

- Delaying the spread of the virus and minimizing concurrent diseases to keep the number of people who fall ill at the same time as low as possible
- Protection and support of particularly affected employees
- Preparation of an emergency operation for a worsening of the situation

Concrete measures to operationalize these action lines were developed by the emergency committee. The focus of the measures was to limit contacts for all employees (managers, support staff and frontline workers) and to allow only contacts necessary for operations under special hygiene rules. For employees in the offices, they were working from home where possible (1300 employees out of 2400 could work from home). Others, whose work content did not allow them to work remotely, or who are technically unable to do so, continued to work on site with specific hygiene rules and in strictly separated teams. The IT services for networks, hardware and software were improved and upgraded very quickly so that staff could work adequately from home.

For employees in the operation units, the number of employees in the departments for operation and maintenance were reduced substantially. The active (on site) and passive (at home) teams alternated weekly and had no contact with each other. Access to particularly sensitive key units such as control rooms was possible for required operating personnel only. Overall, the company has reduced onsite presence of staff from approximately 75% to 20%. Notably, sickness rates have dropped by about 50%.

Strictly tightened hygiene and occupational health rules were also introduced. The focus was on internal contact restrictions, such as a 1.5 m distance rule, no shaking hands, and wearing face masks. The company increased the cleaning routines of the company buildings.

Meetings are avoided as far as possible and telephone and video conferences used if necessary. Further measures have been taken to reduce contact between external parties and customers, including the closure of the customer centre and training centre, as well as pausing the exchange of operating water meters. Staff coming home from holiday in “risk regions” are not allowed to enter the company premises.

To protect and support employees affected with an increased health risk, they can agree with their supervisor on how their work can be performed (e.g. working from home). In addition, those affected by the closure of schools and day-care centres are supported with shopping services as well as personnel transport.

Financial and organizational arrangements for staff were also made. These include continued salary payments, childcare and arrangements for recording remote working hours and a refund of public transport tickets. In addition, changes were established in the decision-making powers for digital work processes (especially signatures and approvals).

## **Consumer-Related Measures**

The Federal Ministry of Justice put civil legislation in place authorizing deferments on water bills. All customers – households as well as industrial – were informed of this. To date, however, very few private or industrial customers have requested it. In addition, it was decided to suspend all water cut-offs. Changing water meters in households was also suspended and the customer service centre was closed to physical visits.

## **Investment activity**

HAMBURG WASSER invests around €160 million annually in the renewal and construction of networks and systems. An interruption or delay of these investments would result in operational problems later on and would also impact the sensitive traffic management in Hamburg, as well as the coordination with other developers in the street space. However, HAMBURG WASSER was able to take and even bring forward important immediate measures on main roads during the partial lockdown due to the drastically reduced traffic load.

## **Analysis of critical process components and emergency plans**

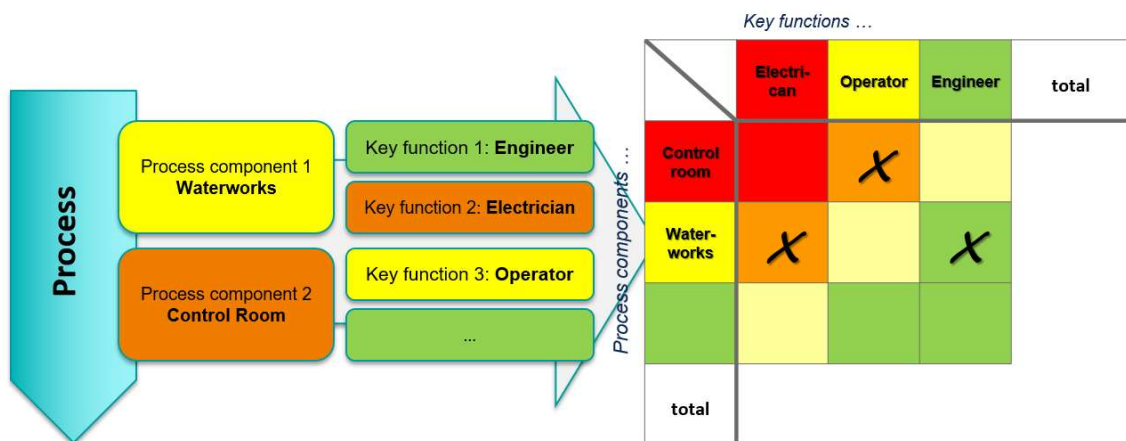
The highest risk in the pandemic has been the possibility that a process breaks down because of the lack of staff present on site. To be prepared for an acute exacerbation of the situation, a systematic approach was developed to identify staff shortages in critical

processes. The methodology is based on a German norm (DIN-EN 15975-2) and was further adjusted to adapt to emerging circumstances.

This analysis was carried out according to the following three steps:

- All critical water supply and wastewater disposal process modules were identified.
- All key staff functions were identified.
- Process modules and key functions were evaluated in terms of their criticality using a traffic light system. A systematic evaluation matrix was developed for the assessment of personnel availability.

In the end, 59 process modules and 128 key functions were identified in a risk matrix. The results reflected the overlap of particularly critical processes with particularly critical key functions. To reduce these risks, special protective measures had to be defined and implemented. Figure 1 illustrates this risk matrix.



**Figure 1: Risk Matrix Analysis for HAMBURG WASSER**

Measures to reduce the vulnerability of specific process components were carried out in addition to the measures mentioned above such as physical and temporary segregations. These include:

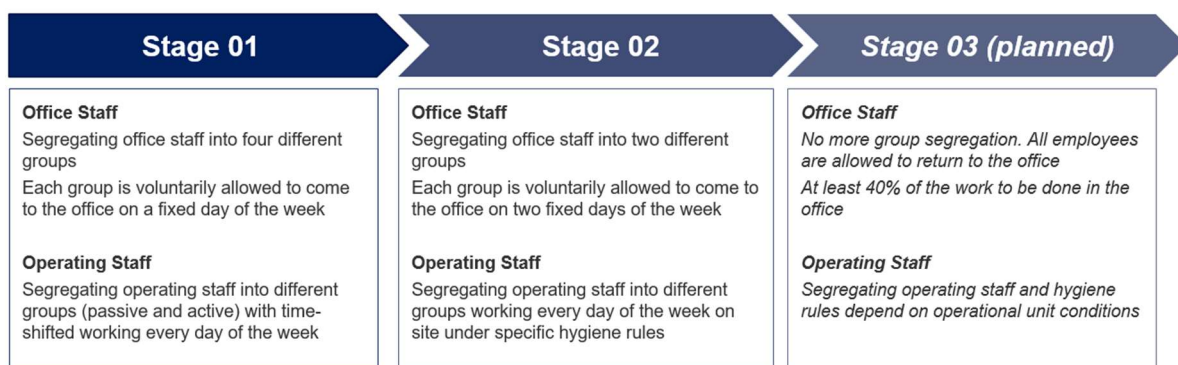
- Creation of personnel reserves (e.g. short-term rudimentary training of employees)
- Integration of external service providers (e.g. construction companies for necessary construction work)
- Work by employees who are under quarantine
- Isolation of employees on site to protect them from infection

### 3-Stage Recovery Strategy and Returning to “New Normal”

Although infection figures in Hamburg decreased significantly between April and May 2020, the virus still is circulating and the situation in Hamburg worsens again. For the emergency committee it is therefore necessary to develop options for coping with a “new normal”.

HAMBURG WASSER has opted for a 3-stage process to limit potential chains of infection and gradually increase on-site presence (see Figure 2). The process will depend on a drop in new infections in Hamburg and surrounding federal states. If these are stable at a low level (e.g. < 25 per week per 100,000 inhabitants), relaxation restrictions are conceivable. However, infection numbers at HAMBURG WASSER itself are also relevant. Here it is difficult to give a concrete guideline, since the number as well as the potential chains of infections and quarantine effects must be taken into account. To be able to evaluate the effects of relaxation restrictions on infection rates, intervals between the stages should be at least four weeks.

The step-by-step plan was used to define a target direction and a framework. If, for operational reasons, it was necessary to deviate from the outlined procedure, this was done by the local managers, supported by a risk assessment.



**Figure 2: 3-Stage Recovery Plan**

## Lessons learned

In summary, the measures taken have been successful so far! HAMBURG WASSER has not entered a crisis and can deliver reliable services without compromising service levels or quality, while contributing to the decrease of infection in Hamburg. Only a few employees of HAMBURG WASSER have been infected by the virus, and with measures such as quarantine after holidays there was no further spread among colleagues. Internally, there was widespread solidarity and understanding of the situation among the staff. In particular, the transparent communication and sharing of information were much appreciated by employees.

Although the crisis has not yet ended, some of the key lessons learnt thus far are:

- **Identifying key challenges:** Reorganization of the daily work and communication were the two central tasks.

- **Emergency management:** Even though there was no crisis from the perspective of water supply and wastewater disposal, we made use of crisis management structures. Our crisis management, which is based on theory, has also proven itself in practice. Above all, the experience gained through regular crisis management exercises since 2015 have been an important success factor. It was important to coordinate continuously and very closely with the CEOs, however not necessary to include them in the emergency committee meetings. The confidence and trust of the CEOs in the work of the emergency committee were very high.
- **Decision making:** Even though the head of the emergency committee formally had the authority to make single decisions, no use was made of it, even if there were controversial discussions in the emergency committee meetings. The final decisions were always based on the collective discussion and consensus.
- **Long-term crisis:** During the first phase of the pandemic, it was not clear that the changes made would be in place for a long time. Initially, actions were only a reaction to the current situation. Only gradually were more long-term perspectives developed and strategies derived from them.
- **Preparing for a pandemic:** Although a pandemic was considered an unlikely scenario, basic principles for dealing with such a crisis were in place in the emergency plan, which proved to be very helpful and gave useful guidance. However, the planning was not very detailed. For many problems, especially for organizational aspects, solutions were developed as the crisis unfolded.
- **Stockpiling of consumables:** There were considerable supply bottlenecks, especially for protective clothing and hygiene articles. As part of emergency planning this must be considered in the future.
- **Technical requirements:** Independent from the pandemic, it was fortunate that about 80% of our employees had been equipped with laptops a few months before. This enabled mobile working very easily and can now be used as an important basic requirement for working from home.
- **Cooperation:** Collaboration and exchange of ideas on "how someone else is doing it" proved very useful. At the same time, there was a high organizational workload, especially at the beginning of the pandemic, leaving little time for extensive exchange and coordination with other water or wastewater utilities. Nevertheless, regular networking within the sector and with other public companies has proved useful and should be further encouraged, allowing for a faster exchange of ideas in the event of another crisis.

## Conclusion

The findings from the emergency response at HAMBURG WASSER are still at a very early stage, but there are two outcomes that are quite clear as we look forward to longer-term planning.

The first is that our positive experiences with updated IT equipment indicate there will likely be more working from home in the future. If work processes and team cohesion allow, this could be up to 60% of working time.

Second, all our work will likely be more digitalized. Paper use will be reduced, and more digital signatures implemented. Certainly, more meetings will be held via video and telephone. However, in terms of operation and maintenance, there was already a high level of digitalization before COVID-19 and there will probably be no fundamental change in the technical installations. When working in the field, however, it will be more common to start directly from home, which will save travel time too.

HAMBURG WASSER is confident that for many employees, the daily routine will change after the pandemic.

## **Acknowledgement**

This case study is made available through the efforts of the International Water Association's COVID-19 Task Force as a contribution on 'lessons learned' during the COVID-19 pandemic.



The IWA COVID-19 Task Force thanks the original authors, who retain copyright of and responsibility for the original text.

Text last updated: 20 November 2020.

Case study available at:

<https://iwa-network.org/news/information-resources-on-water-and-covid-19/>

For more information on the IWA COVID-19 Task Force, see:

<https://iwa-network.org/groups/covid-19-task-force/>