Resilient Wastewater Solutions

Remote Monitoring & Control

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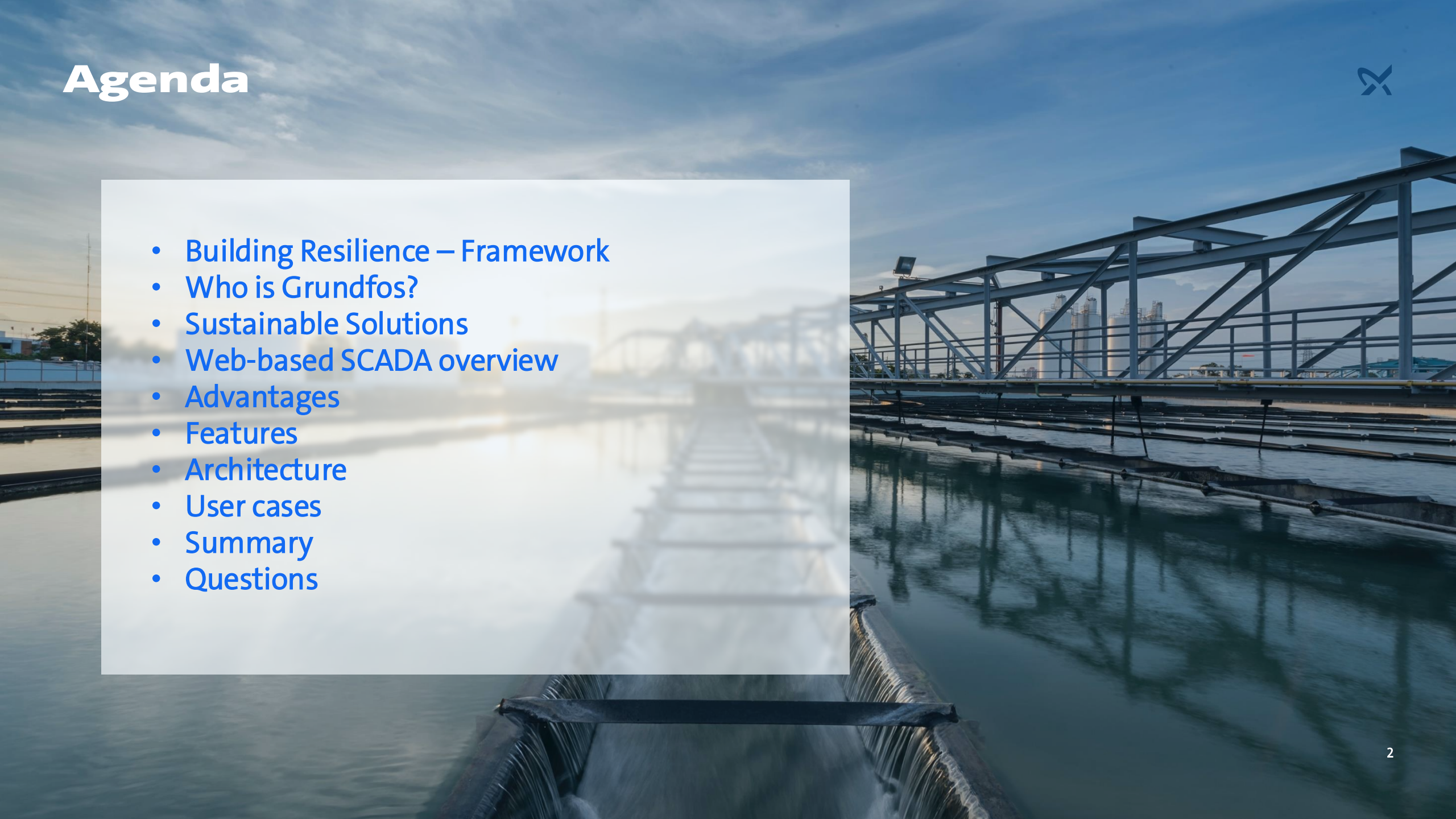
Controls & Digital Solutions

GRUNDFOS

Possibility in every drop

Agenda



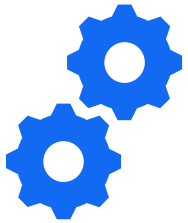
- Building Resilience – Framework
- Who is Grundfos?
- Sustainable Solutions
- Web-based SCADA overview
- Advantages
- Features
- Architecture
- User cases
- Summary
- Questions

- Prepare for….
- Withstand….
- Recover from….
- Adapt to….

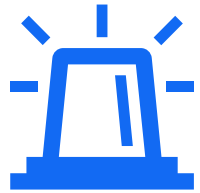
Building Resiliency with Monitoring & Controls

- Weather events
- Varying population levels
- Regulations
- Product support
- Personnel changes

Risk Analysis



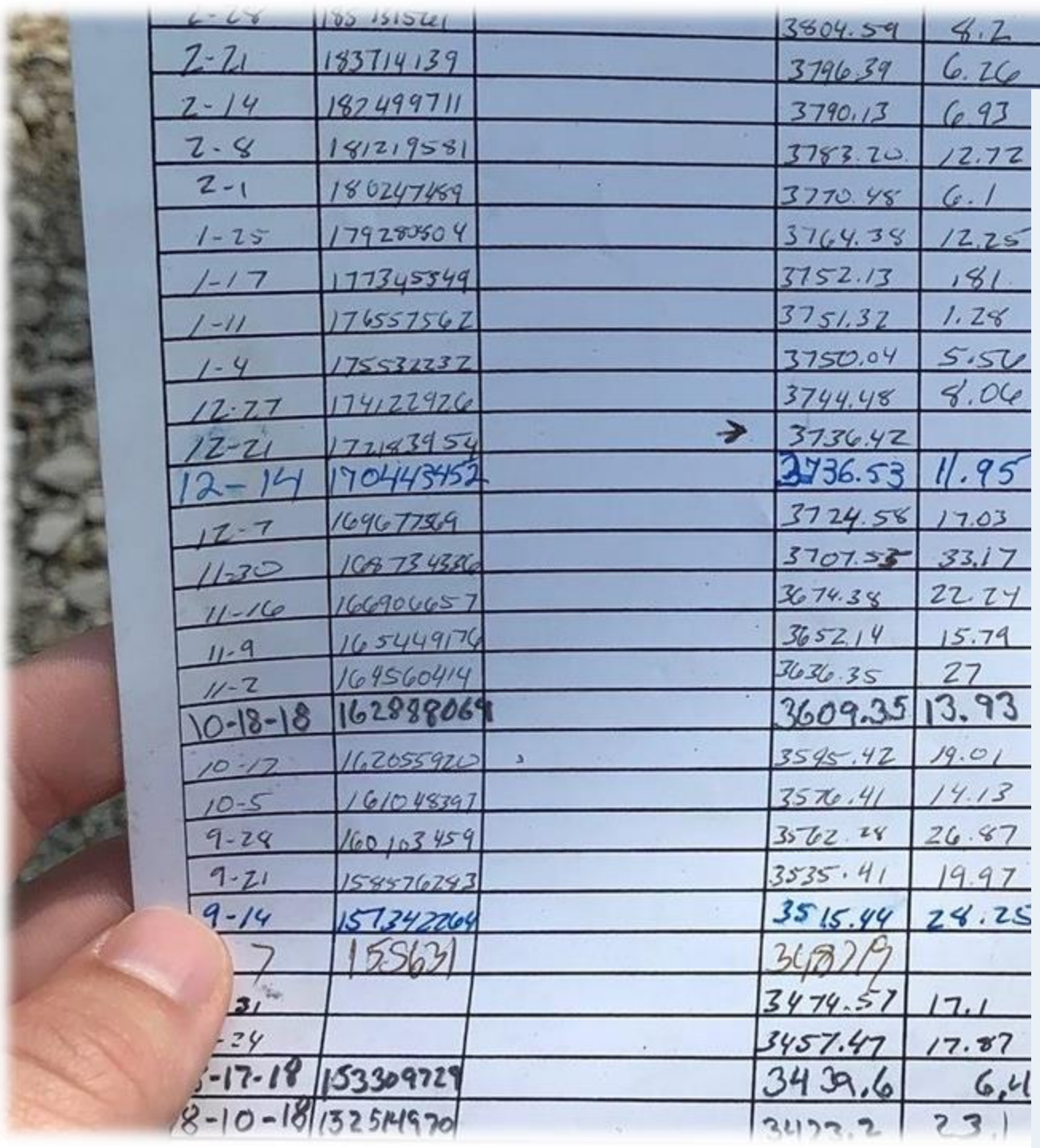
Redundancy



Monitoring & Control

Building Resilience...

Testing & Updates



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Risk Analysis

what would happen if.....

GRUNDFOS

Possibility in every drop

Redundancy

Personnel

Equipment

Software

GRUNDFOS

Possibility in every drop

Monitoring & Control

Instant notifications

Detailed reports

Data driven actions

Predict failures

GRUNDFOS

Possibility in every drop

Testing & Updates

Supplement/Enhance PM Schedule

Meet future regulations and standards

GRUNDFOS

Possibility in every drop


A Global Leader in Water Technology
GRUNDFOS
Possibility in every drop

Complete Solution Provider

End to end

Solutions & Partnerships

Easy to Use

Globally

Designed for

Sustainability & Resiliency

Typical water utility challenges and issues

Operational challenges

1. When the community detects an environmental damage due to operational issues *(e.g. wastewater overflow)*.
2. It is difficult to **schedule preventive maintenance.**
3. Travel costs due to **visits and inspections at remote installations**, as well as lack of resources.

System challenges

4. **Investing and implementing a** new SCADA system is expensive and time-consuming.
5. **Maintaining** and **updating** SCADA systems is difficult and involves elevated labour costs.
6. **Complex** monitoring systems require specialised and highly trained personnel to operate.

Connectivity challenges

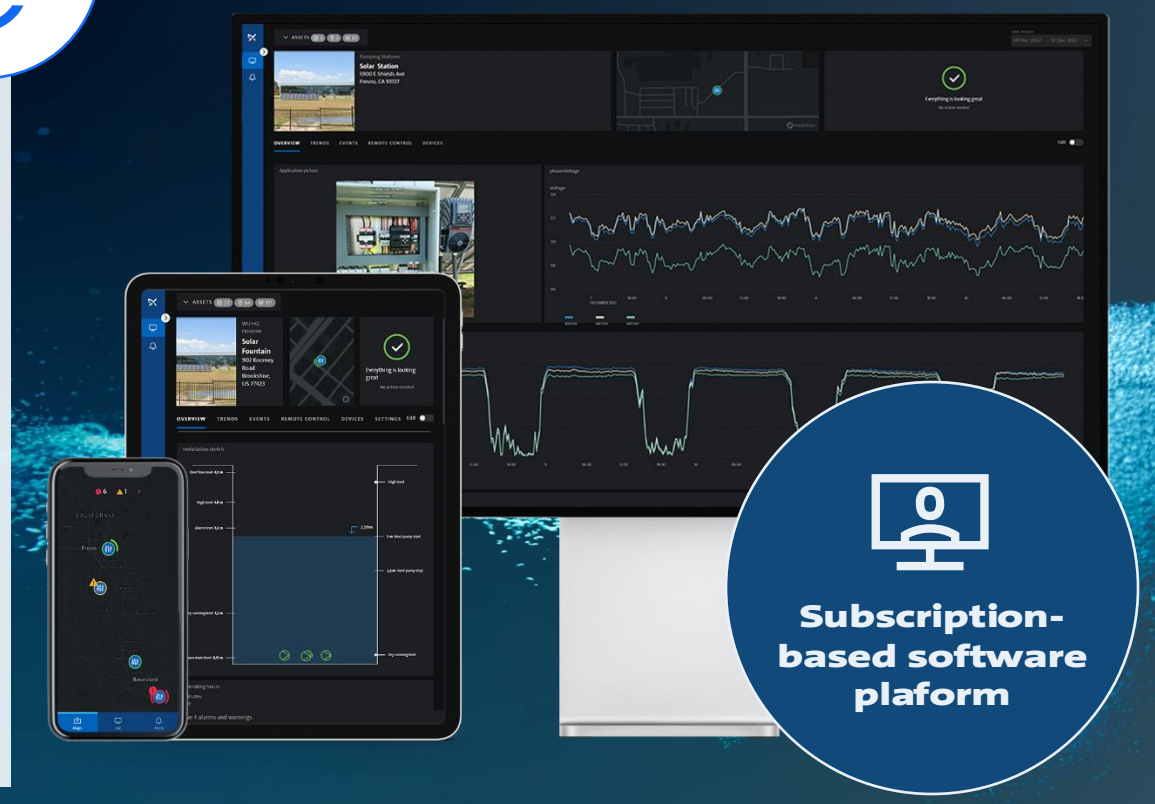
7. **Constant uncertainty** of not knowing what could be happening with the equipment at any given time
8. **Slow response time** when an issue occurs (*e.g. detected by the local community*).
9. **Integration, interpretation and proper visualisation** of SCADA data is expensive.

A cloud-based platform built for resiliency

Connect & Know with Web-based SCADA

a simple subscription-based, software that you can access any time to monitor and control all your water infrastructure equipment and assets.

The software gives you full asset visibility, alerts you when it detects issues and allows you to handle these issues remotely.



Advantages Over Traditional SCADA

SUBSCRIPTION-BASED SOFTWARE AS A SERVICE

- ✓ Simple pricing model
  High data security and system reliability with solution hosted at Microsoft Azure

IMPLEMENTATION

- ✓ Easy integration
- ✓ Plug & play
- ✓ Self-onboarding capability

FLEXIBILITY

- ✓ No special computer hardware needs
- ✓ Access through web browser
- ✓ Access through mobile devices
- ✓ Access from anywhere in the world

HARDWARE

- ✓ A gateway is required to connect
- ✓ Local internet connection required (wired or mobile)

TOP SERVICE

- ✓ How to guides
- ✓ One time service-fee for initial set-up
- ✓ Call up customer support

SCALABLE

- ✓ Unlimited No. of connected devices
- ✓ Door opener for future AI- and cloud-algorithm-based technologies for operation and optimization.

Standard Features

Predict

Remote Control

Compliance

Cut Costs

Simple Functionality for long term success

Remote monitoring and control systems offer many features that significantly enhance the resiliency of wastewater utilities which collectively improve the resilience of wastewater utilities, ensuring they can withstand and quickly recover from disruptions.

- Map View
- Overview
- Trends
- Alarm Management
- Remote Control
- Reporting

Parameters

Resilient Data

By looking at the right data and leveraging that information effectively, wastewater management systems can become more resilient, ensuring reliable service even in the face of challenges

General Security

CONNECTIVITY

- Data Tunneling
- Encryption
- Transport Layer Security (TLS)

IT INFRASTRUCTURE

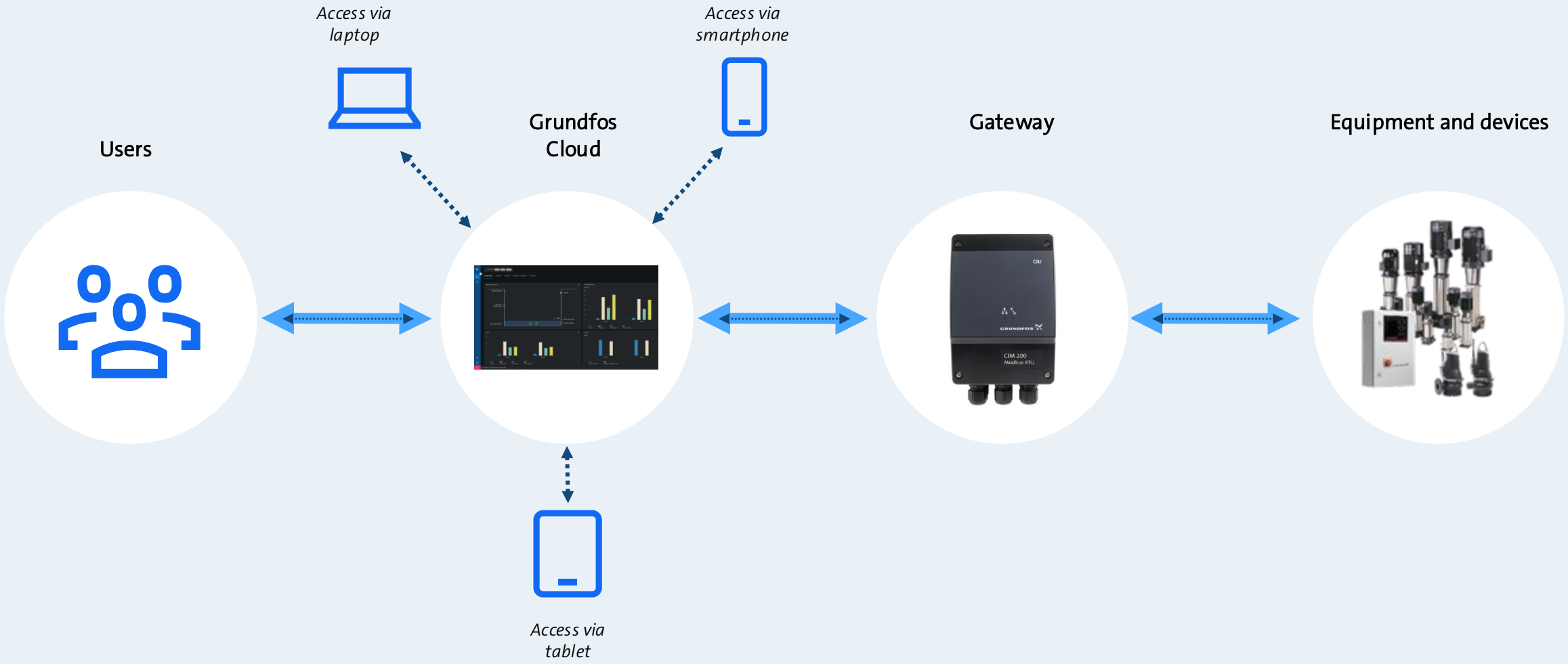
- Web hosted servers
- Secure datacenter location
- Redundant virtualized application services setup
- Standards like penetration test, threat model and continuous logging and monitoring
- Firewall

LOGIN & UI

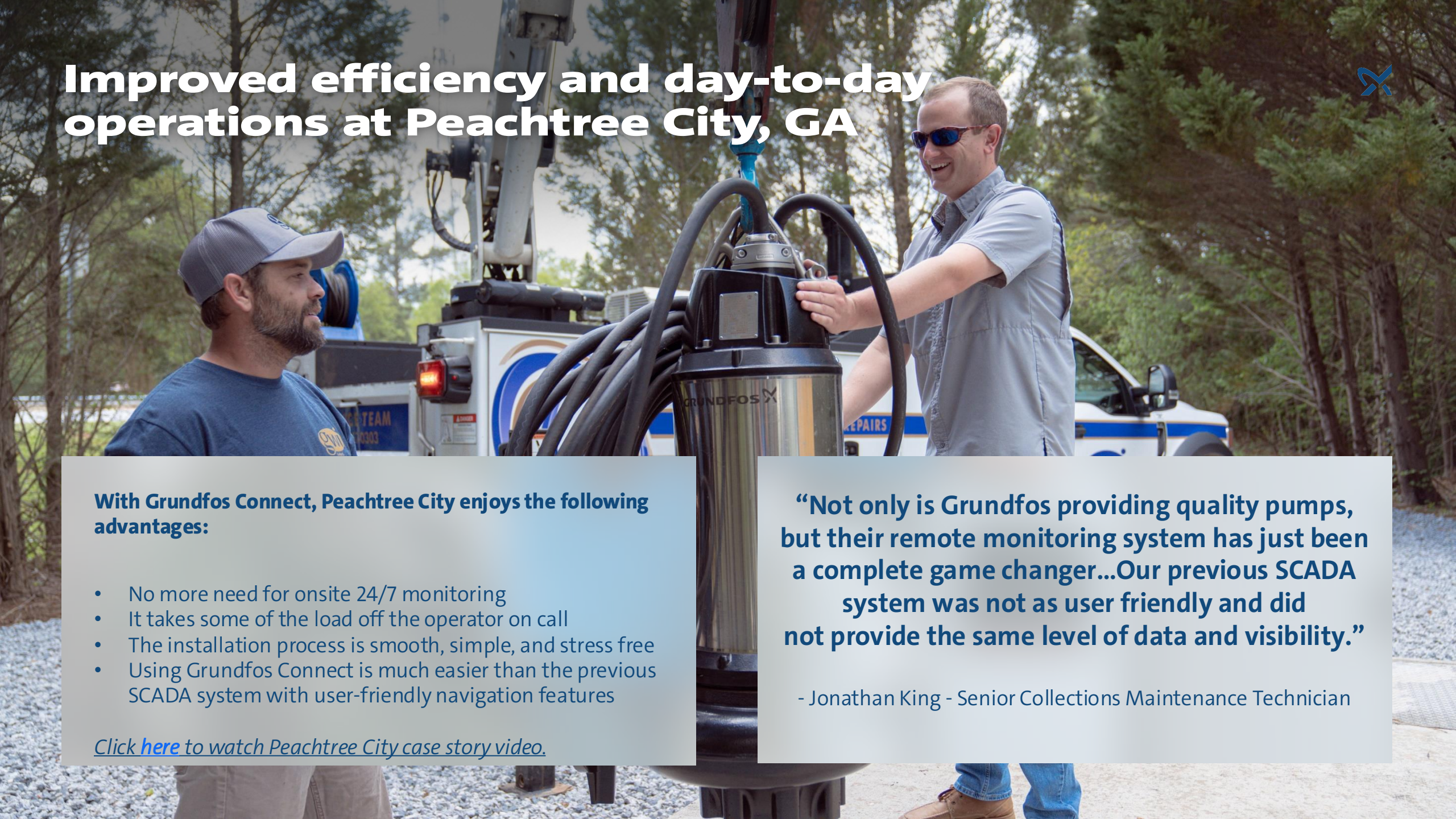
- Different access level (Admin, Operater, Viewer)
- Multi-factor authentication
- HTTPS web access

How the system architecture works

Grundfos Connect is connected to the gateway in your water infrastructure equipment. This provides data to the cloud which can then be accessed by users from any device with an internet connection.



Improved efficiency and day-to-day operations at Peachtree City, GA



With Grundfos Connect, Peachtree City enjoys the following advantages:

- No more need for onsite 24/7 monitoring
- It takes some of the load off the operator on call
- The installation process is smooth, simple, and stress free
- Using Grundfos Connect is much easier than the previous SCADA system with user-friendly navigation features

Click here to watch Peachtree City case story video.

"Not only is Grundfos providing quality pumps, but their remote monitoring system has just been a complete game changer...Our previous SCADA system was not as user friendly and did not provide the same level of data and visibility."

- Jonathan King - Senior Collections Maintenance Technician

Work today to build resiliency for the future

5 goals to reach for

Identify Risks

This helps prioritize areas needing improvement and ensures preparedness for extreme weather events and other disruptions1.

Implement Redundancy

Incorporate redundancy in critical systems to ensure continuous operation during failures. This includes backup power supplies, alternative communication channels, and redundant data storage

Smart Solutions

Leverage advanced technologies like IoT sensors, AI, and machine learning for real-time monitoring and predictive maintenance. These technologies can optimize operations, detect issues early, and reduce downtime1.

Continuous Improvement & Updates

By focusing on continuous improvement, regular testing, and timely updates, utilities can maintain and enhance the resilience of their wastewater management systems, ensuring they remain robust and efficient in the face of evolving challenges

Seek Sustainability

Reduce energy usage and carbon footprint by adopting sustainable practices. This includes using renewable energy sources, improving energy efficiency, and integrating resource recovery processes1.


Questions??


Thank you!