



Introduction to and Refresher on Water and
Wastewater Utility

Leadership Management and Supervision

PA-AWWA 2025 Conference

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ENGINEERING, INC**

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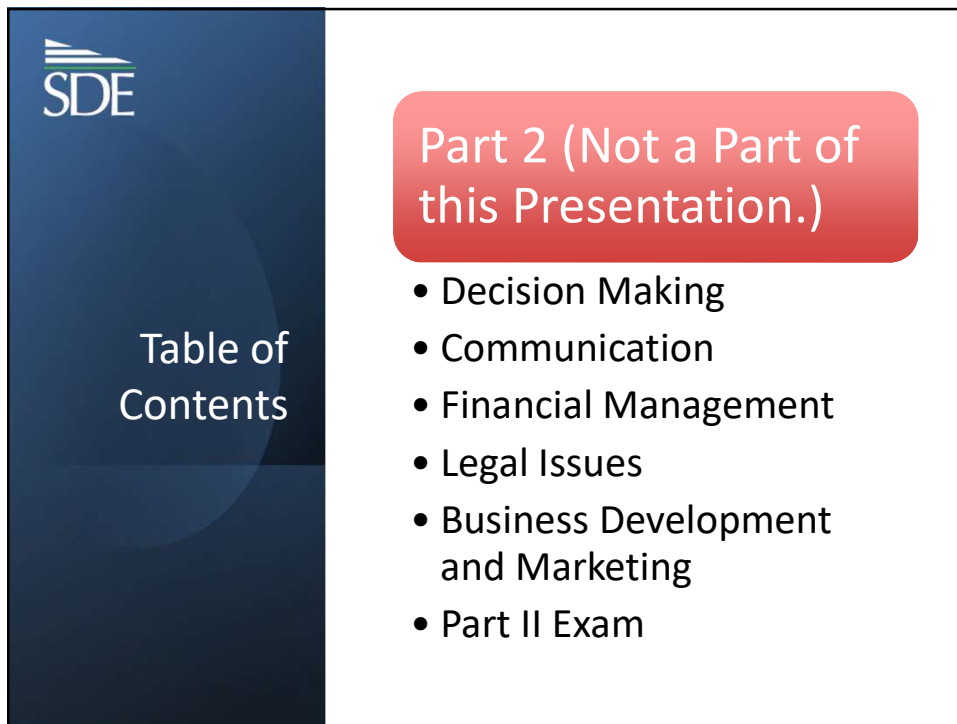


Table of Contents

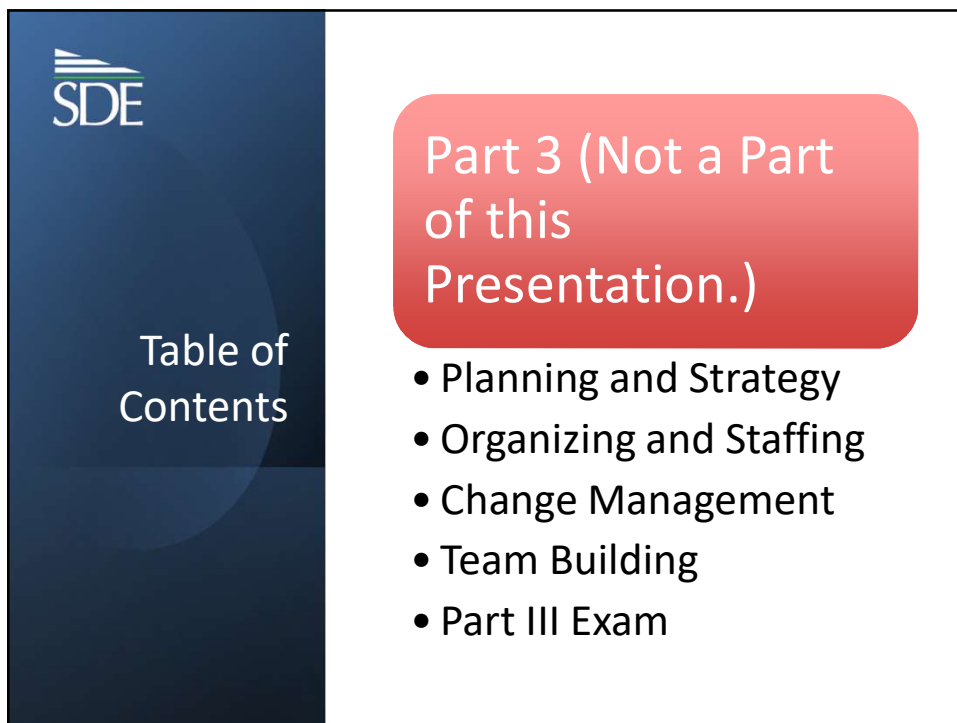
Part 1 (Today's Presentation.)

- Overview of Leadership and Management
- Leadership
- Management
- Supervision
- Part 1 Exam
- Special Topic: Asset Management


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 <h2>Table of Contents</h2>	<p>Part 4 (Not a Part of this Presentation.)</p> <ul style="list-style-type: none"> • Current Hot Topics • Challenges • Quality Movement • Relationships • Training, Teaching, Mentoring, and Succession Planning • Management Systems • Health, Safety, and Security Programs • Computer and Record Keeping • Personal Development • Part IV Exam
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	<p>Intro to Leadership, Management, and Supervision</p> <h2>Introduction</h2> 
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Objectives

- Create an awareness that as a leader there are additional and somewhat different duties and responsibilities compared to operations and maintenance.
- Present a list of leadership, management and supervisor topics that one needs to acknowledge and understand as a utility leader, manager and/or supervisor.
- Present an overview on each topic presented to create an awareness of what responsibilities, skills and duties are involved with being a leader, manager and/or supervisor.



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Comparison of
Operator
Responsibilities
to Leadership
Responsibilities

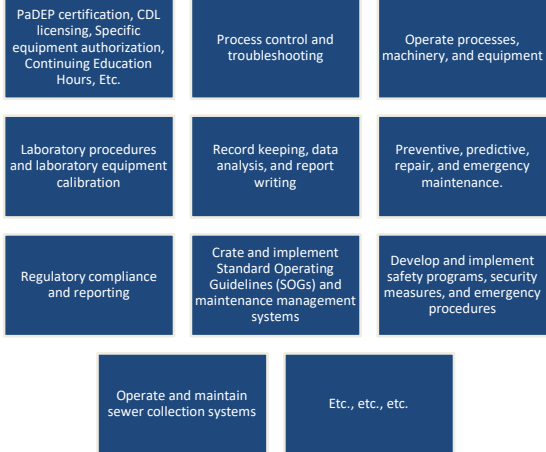

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List of Operator Duties and Responsibilities



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So, now that you're a Leader, Manager, or Supervisor



Some of your thoughts might be:



Well, now what?



What does this mean?



Is the pay going to be worth it?



Am I going to get any guidance?



Who's going to answer my questions?



What is this presentation about, anyway?

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How did
you get
this role?



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Did you, or do you,
even want to be in this
role?

- Some of you probably do, and some of you probably do not.



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Some other questions you might have

- What are my next step(s)?
- Will I like this new opportunity?
- Will I succeed, struggle, or both?
- Will I be accepted as the leader, manager, and/or supervisor?
- Is the pay worth it?
- Is the challenge something I'm going to enjoy?
- Etc., etc., etc.



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This presentation is designed to give you an awareness about what leadership, management and supervision is about.



WHAT TYPES OF RESPONSIBILITIES, SKILLS AND DUTIES ARE INVOLVED?



DO YOU HAVE ANY ADDITIONAL THOUGHTS, QUESTIONS, COMMENTS AND/OR FEEDBACK?



LET'S GET STARTED!



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Part I

Overview of Leadership and Management

Leadership

Management

Supervision

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Objectives



Create an awareness that once one becomes a leader there are additional and somewhat different duties and responsibilities compared to operations and maintenance



Present a summarized list of typical leadership, management and supervisor topics that one needs to acknowledge and understand when involved in overseeing a utility




Present a brief overview on each topic presented to create the awareness of what knowledge, skills, and abilities are needed to be a leader, manager, and/or supervisor.

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A slide with a white background and a blue vertical bar on the right. The SDE logo is in the top left. The title 'Pre-exercise A' is in the center. A list of items is on the left, and a blue circular icon with a white document symbol is on the right.

 Pre-exercise A

- At the end of this course you will be asked to list at least one item from each section of the course that you feel is a strength of yours.
 - Overview of Leadership and Management
 - Leadership
 - Management
 - Supervision



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Overview of Leadership and Management (Cont.)



- Evolution of Management
 - Classical:
 - Systematic
 - Scientific
 - Administrative
 - Human Resources
 - Bureaucratic



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Overview of Leadership and Management (Cont.)

- Evolution of Management
 - Contemporary:
 - Quantitative
 - Uses mathematical data in models to determine future performance
 - Organizational Behavior
 - Looks at how people interact within a group to determine how to make the organization function more effectively
 - Systems Theory and Contingency Perspective
 - The systems theory focuses on the organization's internal structure and behavior, and the contingency theory focuses on the impact these have on the external environment

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Overview of Leadership and Management (Cont.)

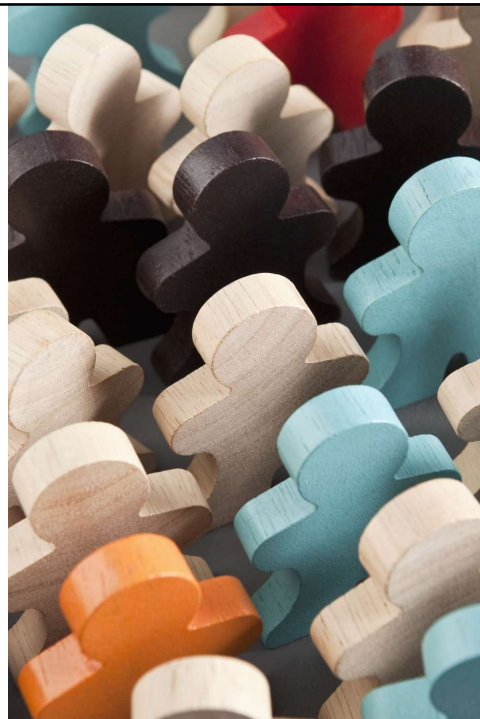
- Progression of Leadership and Management
 - Find a “fit”
 - Be “effective”
 - Prepare a “successor”



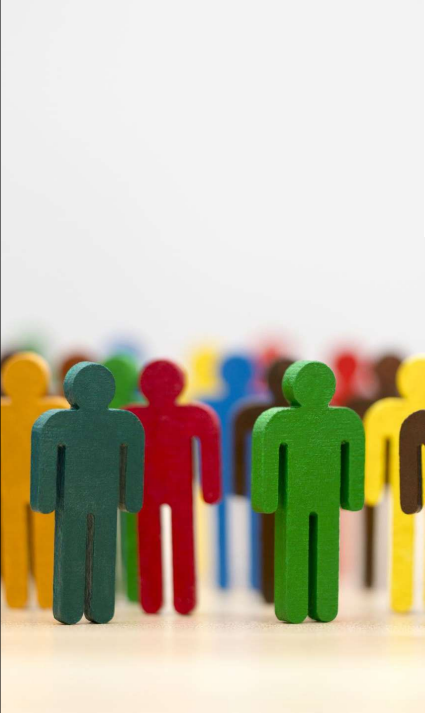
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Overview of Leadership and Management (Cont.)

- Careers in Leadership and Management
 - Management Careers have both opportunities for success as well as downsides
 - Factors include:
 - Education, knowledge, abilities, drive to be an influencer, motivated to manage, etc.
 - When given opportunities:
 - You must be a competent leader, perform well and capitalize to assure your future success




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Overview of Leadership and Management (Cont.)

- Careers in Leadership and Management
 - Defining Success:
 - Technical Expertise, Managerial Rank, Security, Autonomy, Creativity, etc.
 - Understand the path(s) to leadership growth within your organization and pick one that fits you



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Overview of Leadership and Management (Cont.)

- Managers as Leaders
 - There are many leadership styles
 - Styles range from laissez-faire, autocratic, and bureaucratic to transformational, visionary, coach and servant; with additional leadership styles in-between.
 - A style that uses different techniques with same person and/or different people, at different times and pending different situations is referenced as a situational leader

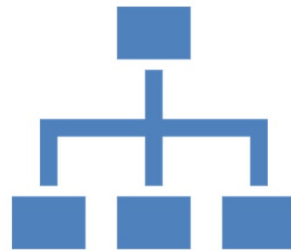




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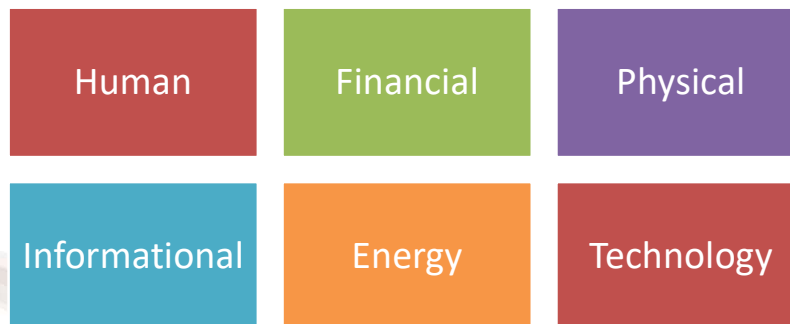
Overview of Leadership and Management (Cont.)

- Managers as Leaders
 - Levels of Leadership:
 - Strategic
 - Mission, Strategic Goals, Corporate Strategy, Business Strategy
 - Tactical
 - Business Strategy, Functional Strategies
 - Operational
 - Functional Strategies



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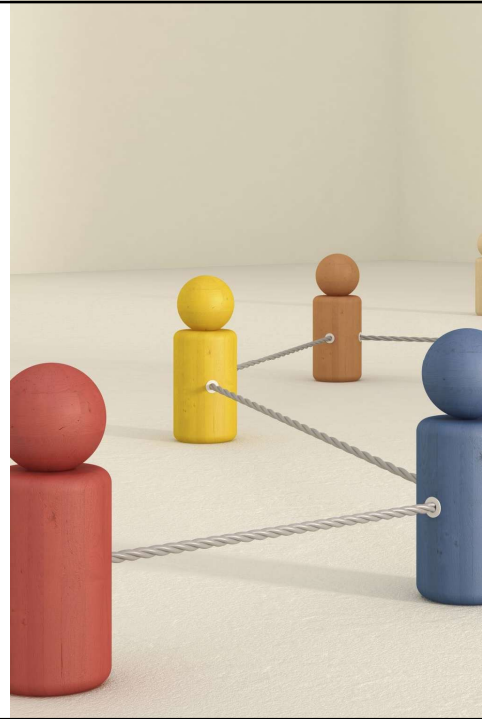
Leader and Manager Resources and Sources of Information



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Characteristics of a Leader

- Strong leadership skills
- Action oriented
- Having and sharing a company vision
- Excellent communication and socialization skills
- Self-confident
- Ability to take risks
- Ability to motivate and generate loyalty
- Creates a positive, synergistic, effective and efficient work environment
- Develops managers and builds teams
- Has a continuous improvement mentality
- Has a customer/client satisfaction focus
- Emotional intelligence
- Etc.



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Factors Influencing Success



Knowledge and ability



Personality and behaviors



Motivations and integrity



Available paths and opportunities to growth



Barriers



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Characteristics of an Effective Organization

- Creating a company Culture
 - How we treat each other
 - How we treat the clients and customers we serve
 - Shared ethics
 - Comradery
 - Level of transparency



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Characteristics of an Effective Organization (Cont.)

- Creating a company culture
 - Working atmosphere
 - Formal or informal, structured or unstructured, proactive or reactive
 - The view toward customer service
 - How continuous improvement is embraced
 - How the competition is respected
 - Public image
 - Etc.



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Characteristics of an Effective Organization (Cont.)

- Mentoring program and career paths for young professionals are important
 - Leadership Path
 - Technical Path
- Succession planning is important for continuity of quality service
 - Senior team member mentors a young professional and documents their institutional knowledge



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The Environments Leaders, Managers and Supervisors Work In

- **Business, and External Environment**
 - Financial Management
 - Legal Issues
 - Social and Political Issues
 - Community, Customer and Developer Interactions
 - Government and Regulatory
 - Professional Consultants
 - Vendors and Suppliers
 - Business Development and Marketing
- **Internal Environment**
 - Decision Making
 - Communication
 - Human Resources
 - Planning and Strategy
 - Organizing and Staffing
 - Change Management
 - Team Building



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List of Leader, Manager and Supervisor Duties and Responsibilities



Leadership functions and skills:

Effectiveness - Assures the right things are being done.

Empowerment - Creates an empowering culture, clarifies and shares the vision, creates cooperation through aligning others, motivates and inspires, delegates, role model and creates strategies for change.



Management functions and skills:

Efficiency - Assures things are being done the right way,

Manages - writes job descriptions, ensures consistency, time management oriented, creates management systems, trains team members, controller, organizer, director, coordinator, continuous improvement, sets structure and procedures, supervises, conducts performance reviews and issues discipline



Combined Leadership and Management:

An active leader that assures a positive environment that provides incentives and opportunities for high performance to occur while balancing the complexities of being a creative thinker, problem solver, decision maker and prioritizer.



Difference between leadership and management:

Leaders assure the right things are being done.

Managers assure things are being done the right way.

Both are necessary.



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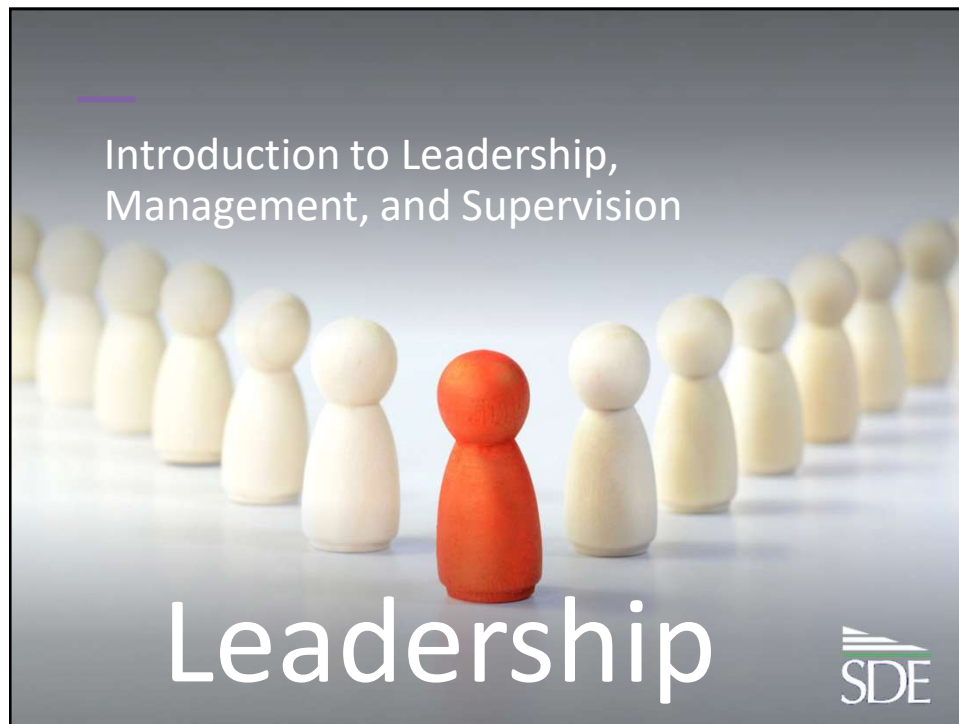
Quiz #1

Is the task below Leadership or is it Management?

- Developing an emergency response manual
- Assigning operator duties for the day
- Presenting a monthly managers report
- Determining what safety training to present
- Updating a maintenance schedule
- Responding to a customer complaint
- Creating a computerized maintenance management system (CMMS)
- Presenting a scheduled public information program
- Developing standard operating guidelines (SOGs)
- Performing an emergency system repair



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Leadership

- Leadership power versus control
 - Motivating and the power of persuasion
 - Accountability – Directing/Guiding/Coaching/Counseling performance
 - Employee needs, expectancy, equity
 - Motivators versus Satisfiers
 - Goal setting
 - Set SMART goals (Specific, Measurable, Achievable, Relevant, and Time-Bound)
 - Outcomes, pros and cons and accountability issues if goals are not SMART

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Leadership in Today's Market



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Managing Across Generations
and Its Challenges

Aging and Shrinking Workforce

Changing required Work Skills
and loss of Institutional
Knowledge

- Baby Boomers
 - born 1946 to 1964
- Generation X
 - born 1965 to 1980
- Millennials
 - born 1981 to 2000
- Generation Z
 - born 2001 to 2020



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Some of Today's Current Topics

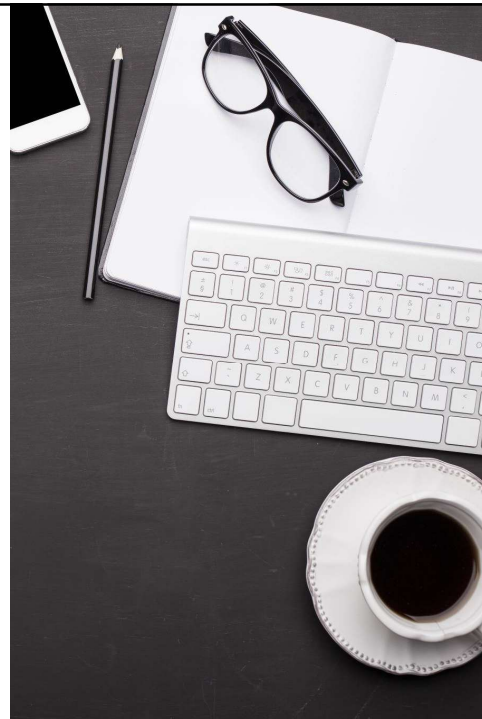
- Situational leadership
- Servant leadership
- Customer centered leadership
- Quality movement
- Constant regulatory additions and Changes
- Municipal Mergers, Privatization, and Contract Operations
- Multitude of changing and new HR Initiatives where a Positive Culture and Inclusiveness are Expected
- Younger workforce demanding higher integrity from Leaders



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Some of Today's Current Challenges

- More Comprehensive & Complex Work Environment
- Artificial intelligence
- Personnel shortages, and skills shortage
- Changing employee expectations
- Remote work and hybrid work
- Technology advances
- Cyber security
- World Turmoil
- Climate Change, Pandemics
- Failed Infrastructure, Deferred Maintenance
- Political and Social unrest
- Better Informed Customer base
- Web information, both accurate and misleading
- Social media, speed of communication, information overload
- Recruiting and Retainage vs. Traditional hiring and Onboarding
- Consumer inability or refusal to Pay what is Necessary



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Other Current Challenges



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Introduction to Leadership, Management and Supervision

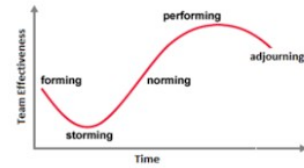
- Leadership
 - Creating a positive, proactive company culture
 - Modifying organizational behavior
 - Who Moved My Cheese?
 - <https://www.youtube.com/watch?v=OvYCLxgkfVY> 12:08 minutes: seconds
 - Our Iceberg is Melting
 - <https://www.youtube.com/watch?v=hB-c3pJR0qU> 9:56 minutes: seconds



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Introduction to Leadership, Management and Supervision

- Leadership
 - Creating a positive, proactive company culture
 - Group formation and development, Tuckman's Model, by Bruce Tuckman in 1965



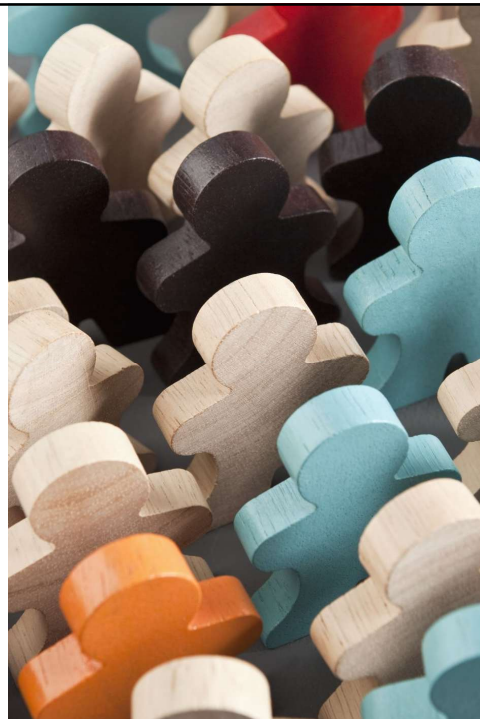

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Introduction to Leadership, Management and Supervision

- Leadership
 - Creating a positive, proactive company culture
 - Programs and projects
 - Effective work teams (Programs)
 - Task teams (Projects)
 - Informal teams


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Introduction to Leadership, Management and Supervision

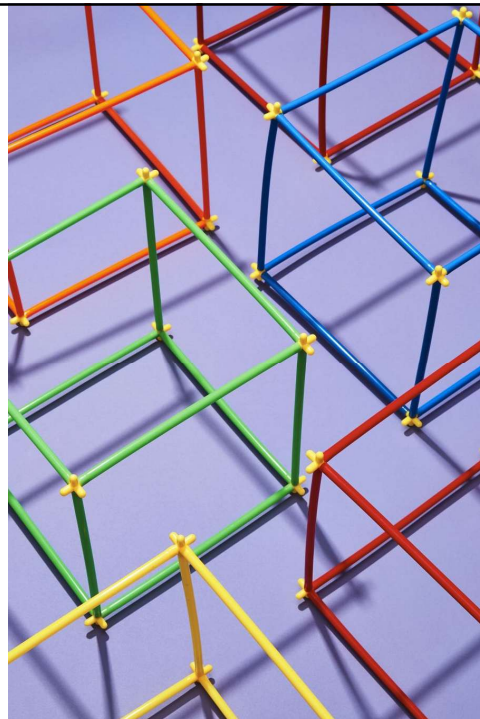
Management



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Management Systems and Personal Development

- Quality Movement
- Relationships
- Training
- Health, Safety, and Security Programs
- Computer and Record Keeping
- Personal Development



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Introduction to Leadership, Management and Supervision

- Management
 - Emotional Intelligence
 - The capacity to be aware of, control, and express one's emotions, and to handle interpersonal relationships judiciously and empathetically.
 - Emotional intelligence is the key to both personal and professional success
 - Emotional Intelligence (EI) is the ability to manage both your own emotions and understand the emotions of people around you. There are five key elements to EI: self-awareness, self-regulation, motivation, empathy, and social skills



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Introduction to Leadership, Management and Supervision

- Management
 - Time management
 - Delegate Tasks.
 - It is common for all of us to take on more tasks than we are capable of completing.
 - Prioritize Work.
 - Create a Schedule.
 - Set up Deadlines.
 - Overcome Procrastination.
 - Deal With Stress Wisely.
 - Multitasking.
 - Multitasking has pros and cons.
 - Start Early.
 - Set short and long-term goals.

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Introduction to Leadership, Management and Supervision

	Urgent	Not Urgent
Important	I ACTIVITIES: Crises Pressing problems Deadline-driven projects	II ACTIVITIES: Prevention Relationship building Recreation New opportunities
Not Important	III ACTIVITIES: Interruptions Some phone calls Some mail Some meetings Popular activities	IV ACTIVITIES: Trivia Some mail Some phone calls Time wasters Pleasure activities

- Management
 - Time management

– <https://youtu.be/zV3gMTOEWt8>



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Introduction to Leadership, Management and Supervision

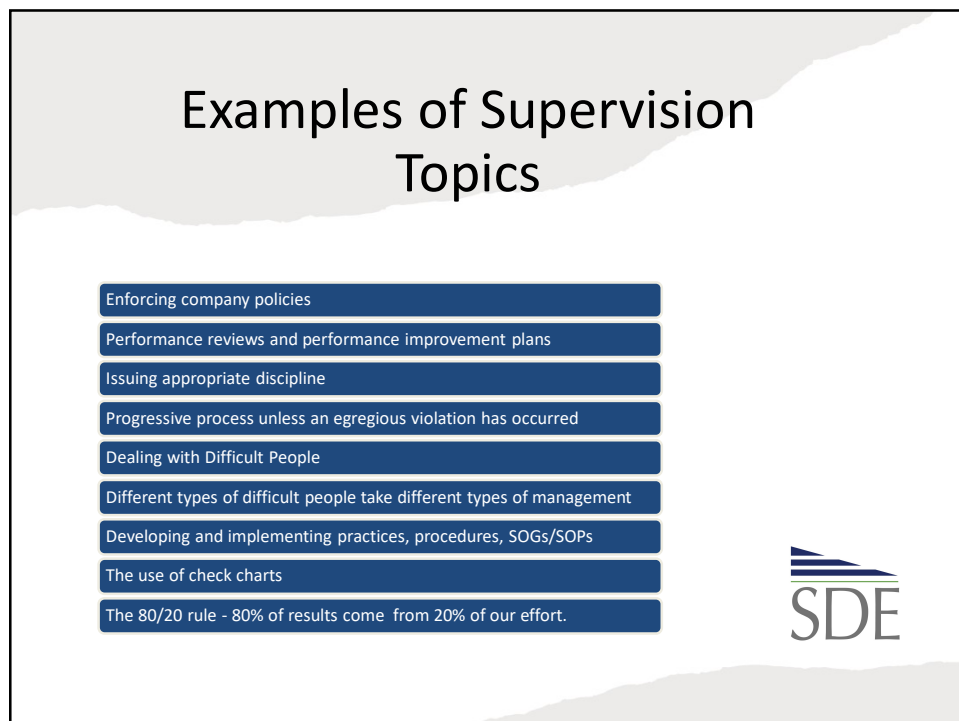
- Management
 - Management programs
 - Group project – create a list of management programs including assignments
 - Initial audit of documents and list of potential management programs
 - Developing and implementing Programs:
 - Group project – create the following programs
 - Mentoring program and career paths for young professionals
 - Succession planning program for retiring professionals



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Understanding Relationships



Fast Decisive



People Oriented



Methodical



Task/Data Oriented



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DISC



- Task Oriented?
- People Oriented?
- Outgoing and Active?
- Reserved & Reflective?

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Introduction to Leadership, Management and Supervision

- Supervision
 - Seven Habits of Highly Effective People, by Stephen Covey
 - Dependence – Independence – Interdependence
 - The Servant Leadership, by James C. Hunter
 - Servant leadership is a leadership philosophy in which the goal of the leader is to serve. This is different from traditional leadership where the leader's main focus is the thriving of their company or organization. A servant leader shares power, puts the needs of the employees first and helps people develop and perform as highly as possible.
 - Instead of the people working to serve the leader, the leader exists to serve the people.



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Introduction to Leadership, Management and Supervision

- Supervision
 - Situational Leadership, by Ken Blanchard
 - The situational theory of leadership refers to those leaders who adopt different leadership styles according to the situation and the development level of their team members. It is an effective way of leadership because it adapts to the team's needs and sets a beneficial balance for the whole organization.
 - Delegation (Who's got the Monkey?)
 - <https://youtu.be/UUhDIV34aDg> 3:31 minutes:seconds



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Introduction to Leadership, Management and Supervision

- Supervision
 - Strengths Finders 2.0, Gallup and Tom Ruth, based on Don Clifton Strength Psychology
 - The 34 Clifton Strengths Themes Explain Your Talent DNA
 - Each of us has a unique combination of 34 CliftonStrengths themes.
 - There are four distinct domains of strength emerge: Executing, Influencing, Relationship Building and Strategic Thinking.
 - The 34 Clifton StrengthsFinder themes naturally cluster into these four domains of strength.
 - The 34 themes explain a simple but profound element of human behavior: what's *right* with people.
 - Individually, each theme gives you a way to describe what you naturally do best or what you might need help from others to accomplish.



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Introduction to Leadership, Management and Supervision

- Review of today's course.
 - Overview of Leadership and Management
 - Leadership
 - Management
 - Supervision



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Introduction to Leadership, Management and Supervision

- Exercise A

– List at least one item from each section of this course that you think is a strength of yours.

- Overview of Leadership and Management
- Leadership
- Management
- Supervision

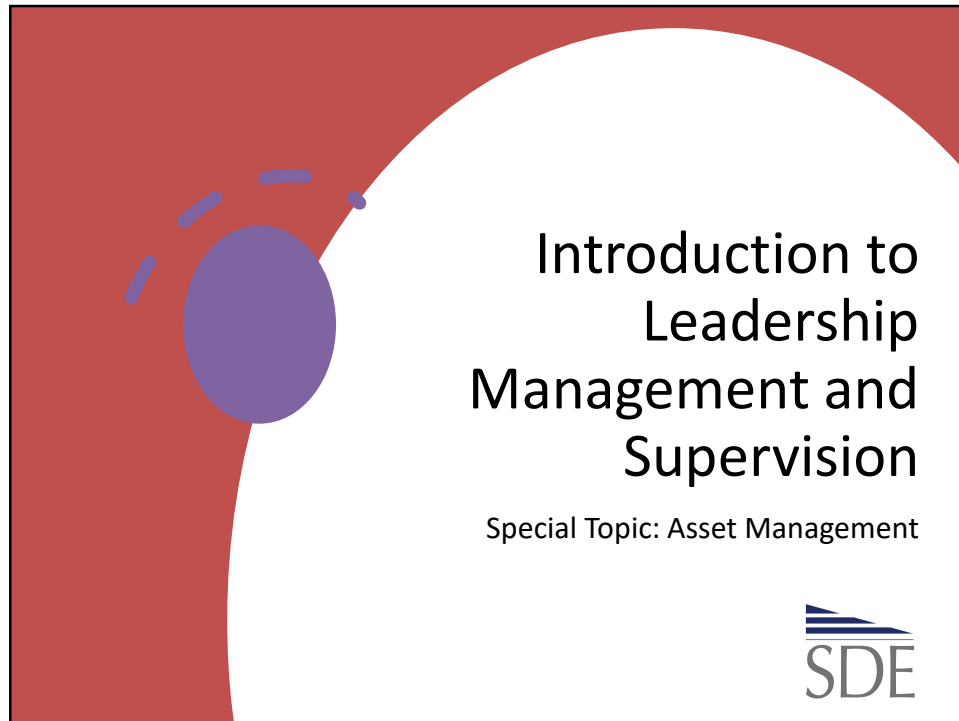


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Quiz #2

- Leadership is making sure you are doing the _____ thing.
- Management is making sure you are doing things the _____ way.
- SMART goals are specific, measurable, _____, relevant, and time-bound.
- Servant leadership is assuring you are _____ your team, as opposed them _____ you.
- Time management needs to consider whether something is Important and/or _____.

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Asset Management

- Asset management is a critical component to addressing/solving Today's Topics and Today's Challenges. Therefore, we'll spend a brief time on asset management today. However, please understand this is a presentation unto itself, and there other critical components to addressing/solving Today's Topics and Today's Challenges.



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Asset Management (cont.)

- Definition: (from Wikipedia)
- Asset management is a systematic process of developing, operating, maintaining, upgrading, and disposing of assets in the most cost-effective manner (including all costs, risks, and performance attributes).



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Asset Management (cont.)

- Asset management is a systematic approach to the governance and realization of all value for which a group or entity is responsible. It may apply both to tangible assets (physical objects such as complex process or manufacturing plants, infrastructure, buildings or equipment) and to intangible assets (such as intellectual property, goodwill or financial assets).
- Asset management is a systematic process of developing, operating, maintaining, upgrading, and disposing of assets in the most cost-effective manner (including all costs, risks, and performance attributes).[1]



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Asset Management (cont.)

- Theory of asset management primarily deals with the periodic matter of improving, maintaining or in other circumstances assuring the economic and capital value of an asset over time.
- The term is commonly used in engineering, the business world, and public infrastructure sectors to ensure a coordinated approach to the optimization of costs, risks, service/performance, and sustainability. The term has traditionally been used in the financial sector to describe people and companies who manage investments on behalf of others.



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Asset Management (cont.)



- The ISO 55000 series of standards, developed by ISO TC 251, are the international standards for Asset Management. ISO 55000 provides an introduction and requirements specification for a management system for asset management.
- The ISO 55000 standard defines an asset as an "item, thing or entity that has potential or actual value to an organization". ISO 55001 specifies requirements for an asset management system within the context of the organization, and ISO 55002 gives guidelines for the application of an asset management system, in accordance with the requirements of ISO 55001.

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Asset Management Examples

Physical and Infrastructure asset management

Public asset management

Financial asset management

Engineering asset management

Software asset management

International Standard series on Asset Management

Enterprise asset management

Intellectual and non-physical asset management

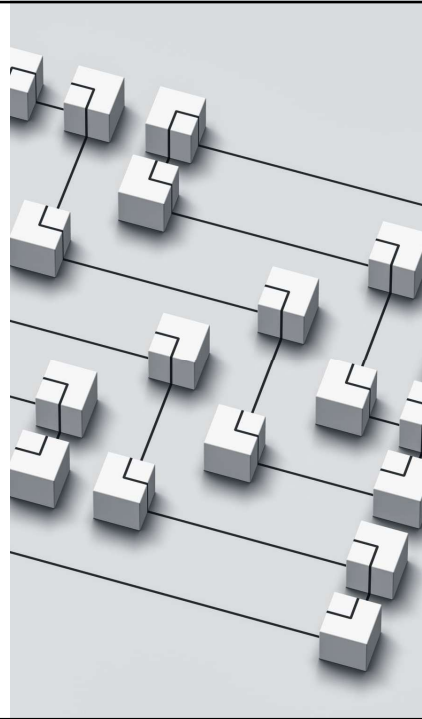


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Asset Management Types

- Intangible asset management
 - Not covered in this presentation.
- Tangible asset management - Physical and Infrastructure
 - Asset management plans can be comprehensive and complex, or overarching and simplified
 - Plan style depends on the intended use and the organization's ability to prepare a plan



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Tangible Asset Management

- Plans shall include, but not be limited to:
 - Labeling each asset
 - Describing each asset
 - Documenting the value of each asset
 - Prioritizing the importance of each asset
 - Determining the life expectancy of each asset
 - Evaluating the present condition of each asset
 - Considering disposal, rebuild or replacement options of each asset
 - Schedule the expected due date for addressing each asset



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Maintenance is a Key Component of Asset Management

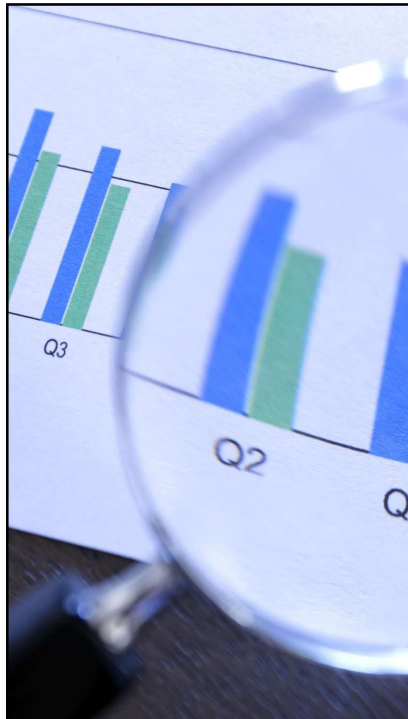
- Maintenance management systems are a necessary part of a maintenance program
 - Computerized maintenance management systems (CMMS) are recommended
- Asset inventory data base and documentation shall include:
 - Property, grounds and buildings
 - Machinery, equipment and supplies
 - Vehicles, fleet and portable equipment
 - Miscellaneous
- Manuals, cut sheets and parts list shall be on record
- Maintenance tools and equipment
- Maintenance procedures and methods
- Maintenance schedules, check lists and work orders
- Predictive, preventive, inspection and testing program
- Scheduled and repair program
- Emergency maintenance program
- Maintenance personnel skills development, training and safety program



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Reliability-centered maintenance (RCM)

- Reliability centered maintenance (RCM) is a maintenance strategy that is implemented to optimize the maintenance program. It is the implementation of a maintenance strategy on each facility asset to optimize plant productivity through cost-effective maintenance techniques.
- Root Cause Analysis
- Five Key Components of Reliability-centered maintenance
 - Function – Primary and Secondary
 - Functional Failure – Total or Partial
 - Failure Mode – Deterioration, Lack of lubrication, Dirt, Disassembled, Human error
 - Failure Effect – What happened in context to the operation
 - Failure Consequences – Qualitative analysis to determine the importance of the failure



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Protecting and Maintaining Your System: Asset Management for Water & Wastewater Facilities (PARTIAL)

Marc Neville
PA Dept. of Environmental Protection
&
Walter Higgins
U.S. Environmental Protection Agency

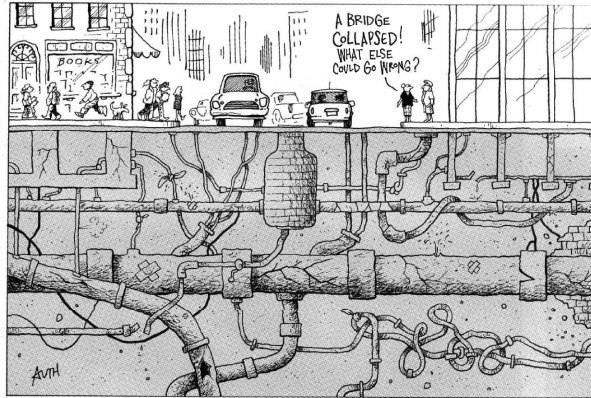
JOSH SHAPIRO, GOVERNOR | JESSICA SHIRLEY, SECRETARY



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Pennsylvania
Department of
Environmental Protection



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Topics

- What is Asset Management?
- Why Asset Management?
- Review of Basic Asset Management Plan
- Commercial Mapping Programs
- Effective Communication

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Challenges facing Wastewater Utilities

Maintaining **aging structures** and equipment while...

...Providing a high level of service at a **reasonable** cost

HOW CAN WE DO IT?

By Good Planning!



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What is Asset Management?

- Asset Management is a way to **PLAN FOR REPAIR AND REPLACEMENT** of your system's **major components** by **evaluating them** and **determining WHEN and how much it will COST**.
- Asset management can ultimately **save** a system **money by planning for repairs or replacements**.
- Knowing when your system will need to pay for major repairs or replacements can **alleviate** the **cost** of **paying** for "**emergency**" or unplanned **projects**.

PA DEP Website

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What is Asset Management?

- Agencies
(<https://www.pa.gov/agencies/dep.html>)
 - > Department of Environmental Protection
 - > Programs and Services
 - > Water
 - > Clean Water
 - > Wastewater Operations and Assistance
 - > Wastewater Operator Resources
 - **OR**
 - Agencies
 - > Department of Environmental Protection
 - > Programs and Services
 - > Water
 - > Safe Drinking Water
 - > Capability Enhancement Program
 - > Asset Management
- [Asset Management Information Sheet\(opens in a new tab\)](#)(PDF)
[Simplified Spreadsheet for Asset Management\(opens in a new tab\)](#)(Excel).

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Looking at:

- Asset Condition (poor, new)
- Asset Criticality (catastrophic, minor)
- Cost of periodic maintenance (\$\$ vs. \$\$\$\$)
- Cost of operating (energy)
- Cost to replace (in kind, upgrade)

Annually determine:

- ☐ Let It Fail
- ☐ Maintain It
- ☐ Rehabilitate It
- ☐ Replace It

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What is Asset Management ?

...in other words,

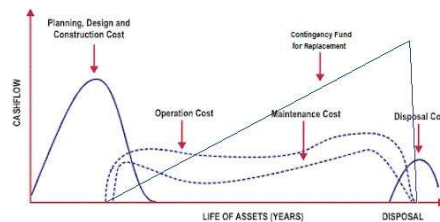
- How do I budget for this Pump Station?
 - for Maintenance, Rehab, AND/OR Replacement?
 - and When?
 - **What is the risk and consequence of FAILS?**
- Outcomes:
 - Regularly updated **WRITTEN PLAN** for O&M, Rehab, Replacement, Capital Improvement Plans
 - Identifies future \$\$ needed

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Puts Primary Focus upon

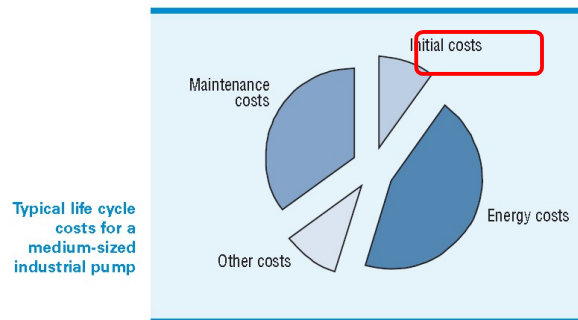
Long-term life-cycle costs and sustained performance;
not

Short-term, day-to-day operation



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Why Asset Management?



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Why Asset Management?

- Aging Infrastructure
- Funding shortages
- Aging workforce.
- Compliance/Regulatory Pressure.
- Business Financial Rating

End of this partial PaDEP Asset Presentation.

IT'S GOOD BUSINESS PRACTICE!

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Review
of
Today

Part 1 (Today's
Presentation.)

- Overview of Leadership and Management
- Leadership
- Management
- Supervision
- Part 1 Exam
- Special Topic: Asset Management

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Future
Topics

Part 2 (Not a Part of
this Presentation.)

- Decision Making
- Communication
- Financial Management
- Legal Issues
- Business Development and Marketing
- Part II Exam

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Future Topics

Part 3 (Not a Part of this Presentation.)

- Planning and Strategy
- Organizing and Staffing
- Change Management
- Team Building
- Part III Exam

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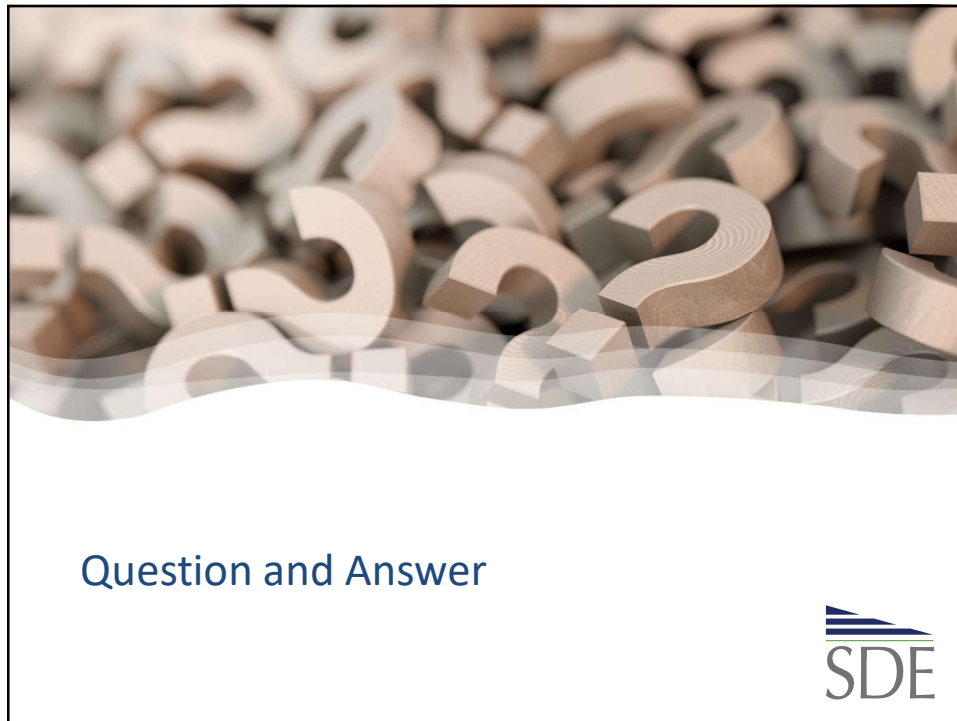


Future Topics

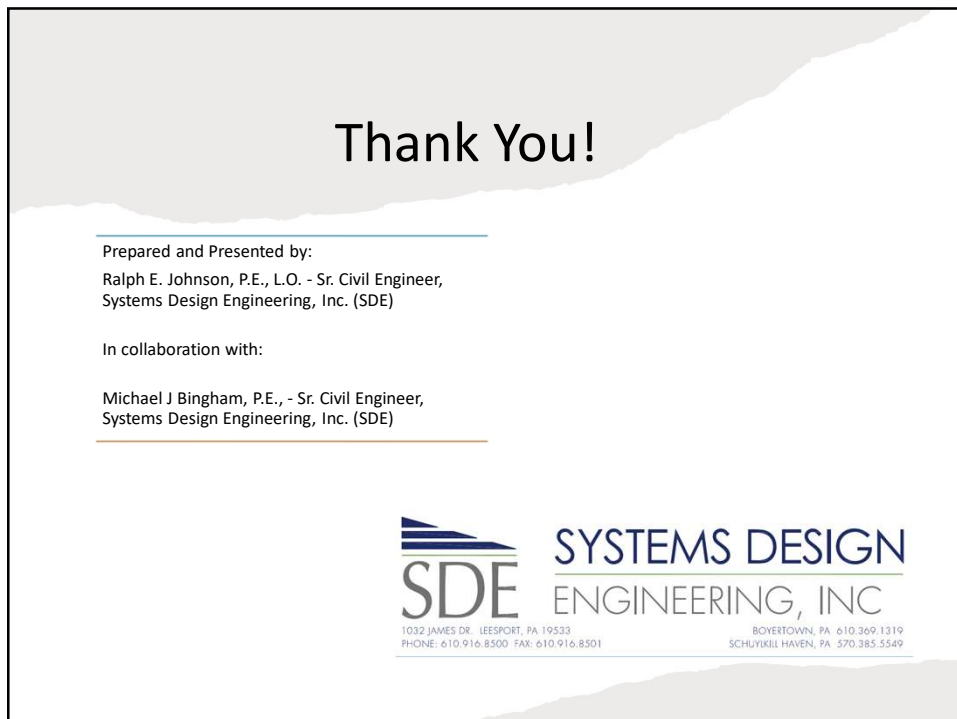
Part 4 (Not a Part of this Presentation.)

- Current Hot Topics
- Challenges
- Quality Movement
- Relationships
- Training, Teaching, Mentoring, and Succession Planning
- Management Systems
- Health, Safety, and Security Programs
- Computer and Record Keeping
- Personal Development
- Part IV Exam

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Summary of Key Contributors

- **Ralph E. Johnson, P.E., L.O.**

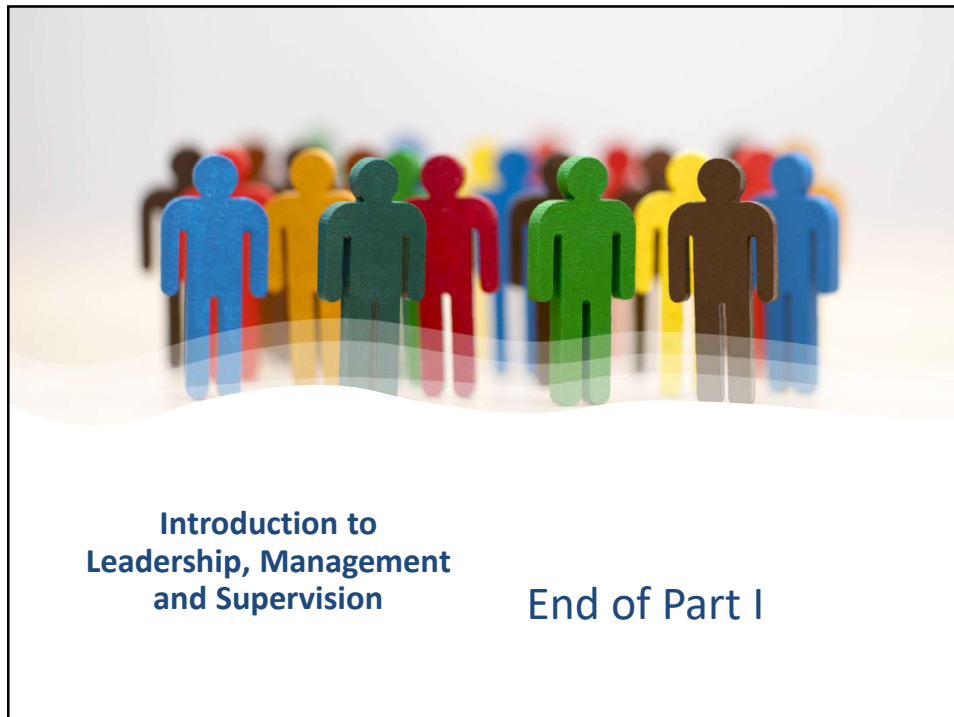
- 50 years in municipal management, public works, contract operations, consulting, and engineering
- Project management and design of public infrastructure projects
- Extensive experience in municipal management, project management, water and wastewater operations
- Graduate of Pennsylvania State University (A.S. Chemical Engineering Technology, 1981) and Alvernia College (B.A. Business Management and Administration, 1995)
- Licensed Professional Engineer in Pennsylvania (Reg. No. PE0787704)
- Certified PaDEP Water Operator (Certification No. W17282) and Wastewater Operator (Certification No. S7622)

- **Michael J. Bingham, P.E.**

- 14 years of experience in civil engineering, land development, and municipal infrastructure
- Expertise in site grading, stormwater management, zoning enforcement, and land development
- Comprehensive knowledge of NPDES permitting, erosion and sediment control, and roadway design
- Project management and design of municipal and private infrastructure projects
- Graduate of Clemson University (B.S. Civil Engineering)
- Recognized as one of Central Pennsylvania's "40 under 40" for professional achievements and community contributions
- Licensed Professional Engineer in Pennsylvania, Delaware, New Jersey, and Maryland



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Quiz #3

- True or False
 - Asset management is a systematic process of developing, operating, maintaining, upgrading, and disposing of assets in the most cost-effective manner.
- True or false
 - There are eight examples of asset management.
- True or False
 - Tangible asset management shall include “labeling each asset”.
- True or False
 - Tangible asset management shall include “considering disposal, rebuild or replacement options of each asset”.
- True or False
 - Maintenance is a key component of asset management.