

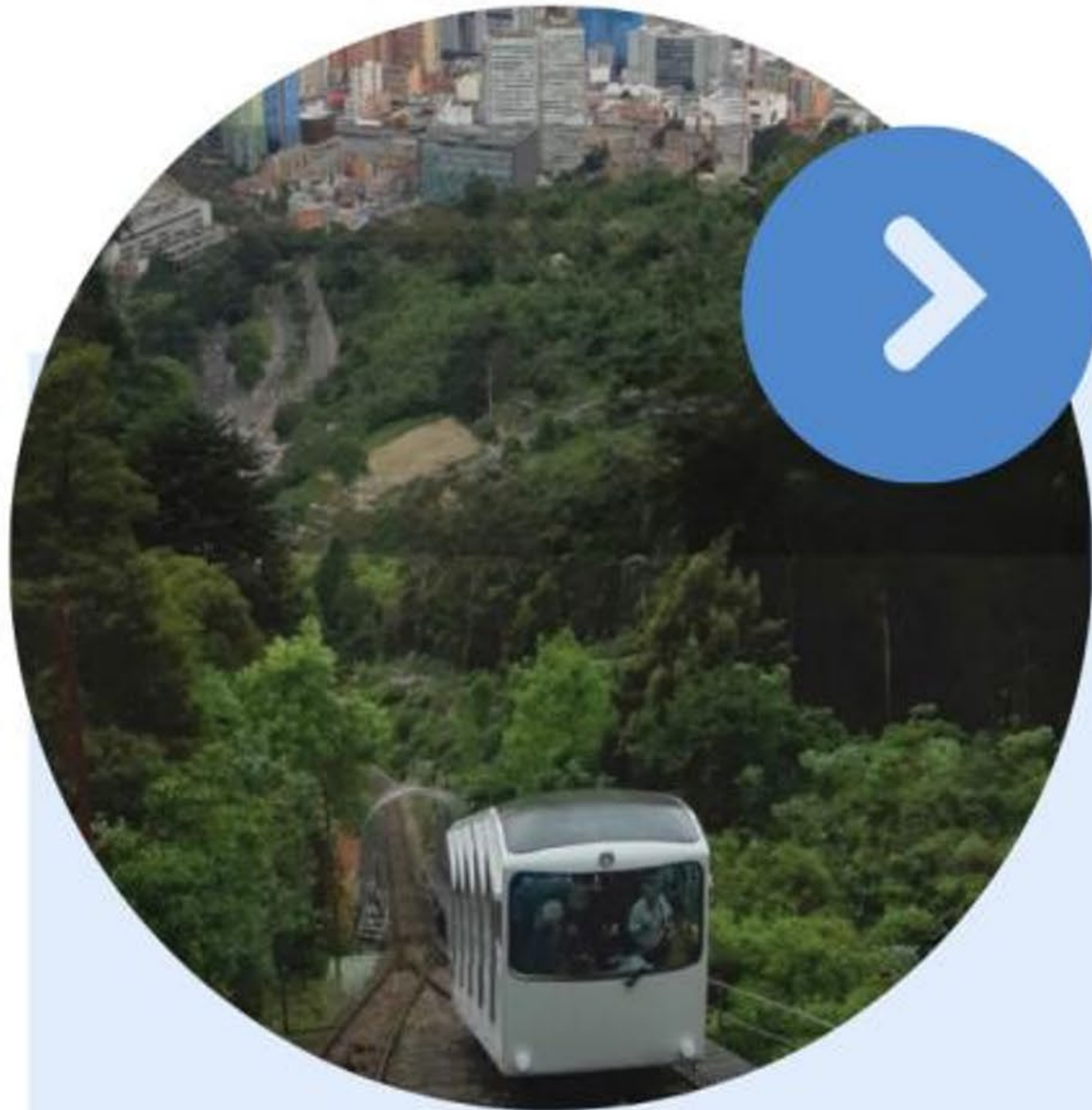
Localizing the SDGs through Infrastructure Asset Management

**Daniel Platz, Chief, Development Cooperation Forum Unit,
FSDO, UN DESA**



United Nations

Introduction: A Landmark UN Commitment on Infrastructure Asset Management



“We will support national and local governments to prioritise and strengthen their policies, strategies and practices to implement effective infrastructure asset management over the lifecycle of assets and mobilise revenues as appropriate.”

Member States , Compromiso de Sevilla, 2025

Manage what we build - or waste what we invest

Why does Infrastructure Asset Management matter?

- Over **90 percent** of the SDGs and their targets are directly or indirectly linked to infrastructure
- Undermaintained infrastructure can lead to an annual **2 percent** loss in GDP growth
- Up to **85 per cent** of life cycle costs occur after the construction phase
- Every **\$1** spent on infrastructure maintenance is as effective as **\$1.5** of new investments



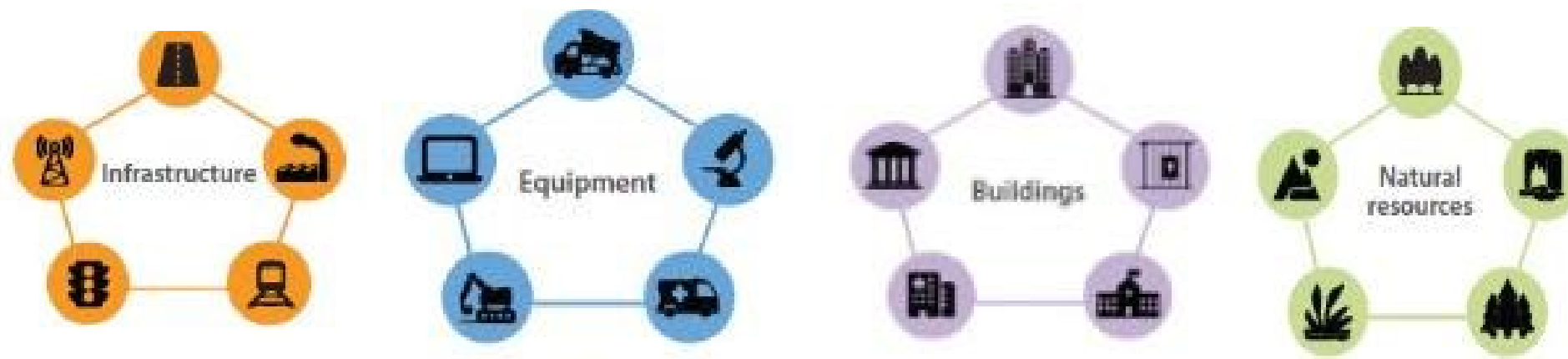
Understanding Infrastructure Asset Management

What are public infrastructure assets?

Physical things of value that are essential to the **delivery of basic public services** and are owned or managed by the local or central government

What is public infrastructure asset management?

Infrastructure asset management refers to the **coordinated series of activities that monitor and maintain** these things of value.



What is the goal?

Maximize the service value of public infrastructure investments and leverage them to finance sustainable development for generations to come!

What makes UN DESA's training approach unique?

- First global guidebook on infrastructure asset management for local governments
- Introduces IAM as a public-sector duty
- Positions IAM as a team exercise driving organizational change
- Spans engineering, finance, and procurement

Common Challenges

Major challenges remain. Many governments still don't know exactly what they own or what condition it's in. Infrastructure systems keep growing, but maintenance capacity doesn't. Responsibility for asset management is often fragmented, with no clear leadership.



DATA GAPS



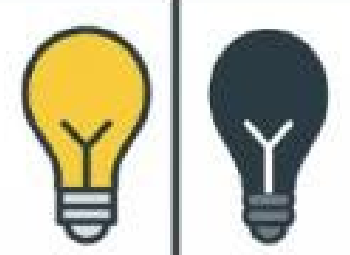
**GOVERNANCE
FRAGMENTATION**



**BUDGET
DISCONNECTS**



**MANAGEMENT
MINDSET**



**NEW AND SHINY
VERSUS OLD
AND LASTING**

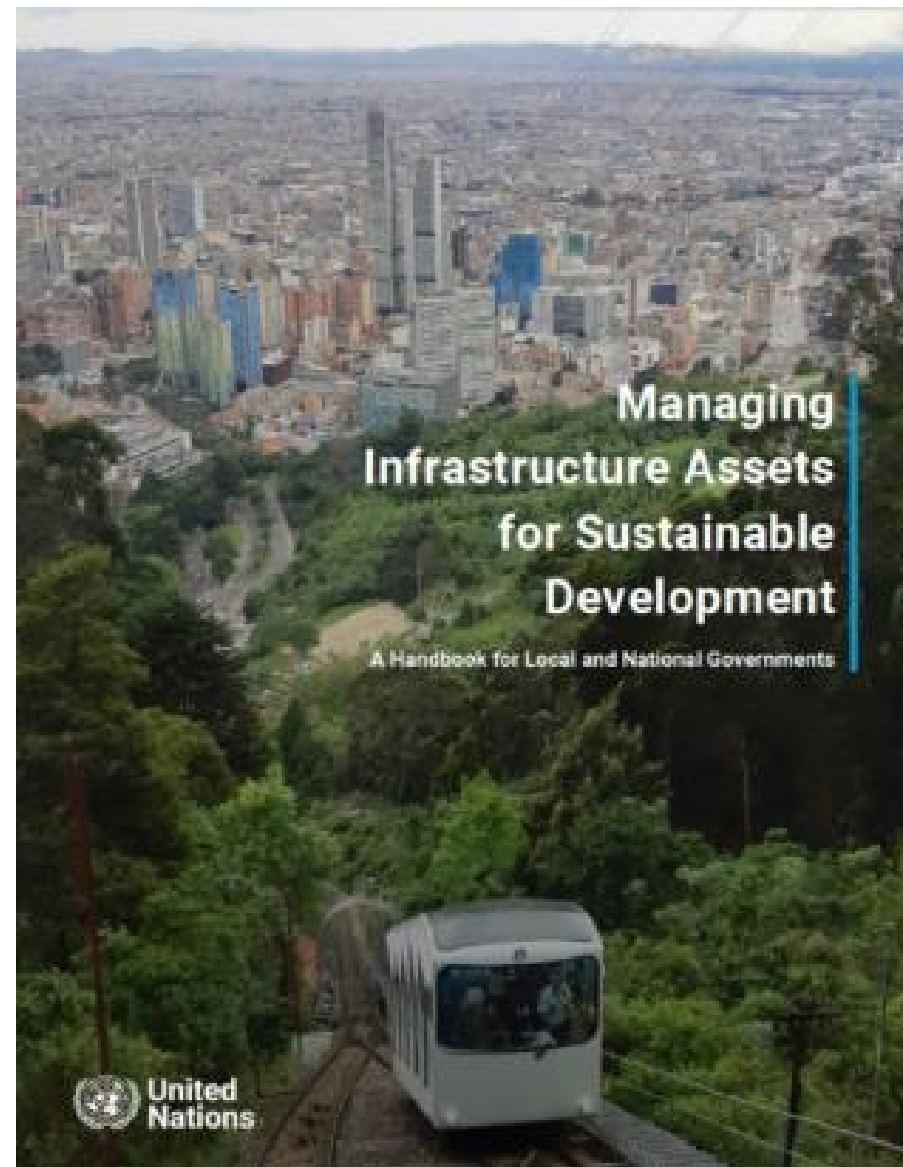


IAM = Strategic Thinking

Infrastructure asset management isn't just about maintenance. It's strategic thinking for the systems that hold up our societies. It's about timing, resources, and smart decisions that keep things working for everyone.



UN Tools on IAM



Check it out
here:

Chapter Tools

- Asset Management Diagnostic Tool
- Asset Management Action Plans (AMAP)
- Building data and information system
- Emergency response AMAPs
- Climate vulnerability assessment tool
- Process tool for building enabling environment



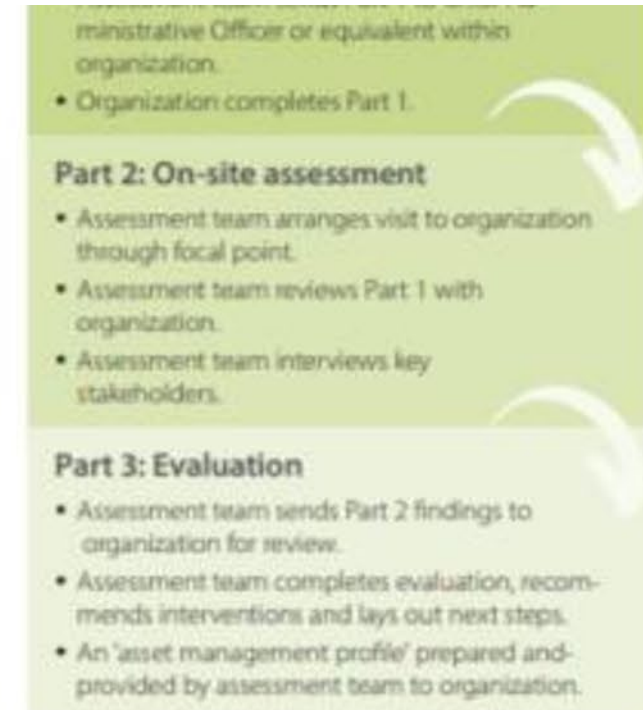
The UN Handbook on Infrastructure Asset Management

- ✓ Freely available in 11 languages, including all 6 UN languages
- ✓ Step-by-step guidance in an accessible, appealing format
- ✓ Not just a 400-page textbook – designed for easy use

Steps to recommend interventions



Priorities, stakeholders and goals



Diagnostic Tool spreadsheet tabs

Asset Mgmt	Overview	Part1_Cover	Part1_CoverEx	Part1_Assess	Part1_AssessEx	Sheet1	Part 2_Onsite	Part 2_OnsiteEx	Part3_Cover	Part3_Eval
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Asset management action plan (AMAP) steps



Diagnostic Tool awareness levels

Basic (Level 1)	The government is aware of the need for asset management but has not been able to do so.
Elementary (Level 2)	The government is aware of the need for asset management and has started to implement some of the activities.
Progressing (Level 3)	The government has implemented all of the asset management activities in at least one of the categories of assets.
Advanced (Level 4)	The government has implemented the asset management activities in all of the categories of assets under its jurisdiction.

What does this look like in practice?

These are not workshops with a report—they are real results:
New plans, national policy shifts, stronger budgets, and smarter service delivery.



- Over 220 Local Government launched Asset Management Action Plans
 - Over 4500 public officials trained



Section 1: From Personal to Public Asset Management

We all own/manage personal “assets” or “things of value” for a reason.

Why do I need personal things of value?	What personal things do I need to meet that need?
Shelter	House, Apartment
Food	Cooking equipment
Transportation	Car, motorcycle, bicycle

We manage our personal assets



Or what I can learn from my personal assets
(e.g., laptop, motorcycle, car or house)?



BREAK FOR DISCUSSION

Facilitator: Please stop the recording and ask the following questions to participants:

1. What information are you collecting and updating about your car to make sure you get the most out of it?
2. Do you always have all the data available that you think you need?

The 6 Fundamental Questions of IAM:



**What and
where is the
asset?**



**What is it
worth?**



**What is its
condition?**



**What is its
remaining
service life?**



**What is its
deferred
maintenance?**



**What
should you
fix first?**

Adapted from Vanier, 2000, p. 13 with images from the Noun Project.

From Personal to Public – Your Personal Assets need Public Assets

Educational
resources
(e.g. laptop, textbooks)

Personal Asset



Public Asset



School

Private Car



Road

Private Toilet/Shower



Water
Treatment
Plant

We are all asset managers!

- In our personal lives, we carefully manage homes, cars, savings, and belongings
- Yet this same commitment rarely extends to public assets
- Imagine if roads, schools, water systems, and hospitals were cared for with the same dedication we give our own property

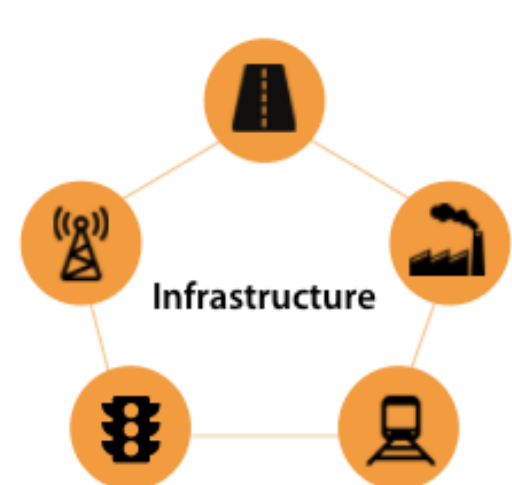


Section 2: Infrastructure Asset Management as a Public Sector Practice:

**What is it?
Why do we do it?
And
Who does it?**

What is Public Infrastructure Asset Management again?

The right assets, in the right place, at the right time managed by the right people!



YOUR TEAM ARE THE RIGHT PEOPLE!



BREAK FOR DISCUSSION

Dear Facilitator,

please stop the recording and
prompt discussion:

Why do we need better infrastructure
asset management at the local (and
national) government level? What
are the benefits of IAM?



Why do we do it? - The Benefits of IAM



- Reliable Public Services
- Financial savings and more revenue
- Environmental sustainability
- Disaster Resilience
- Enhanced transparency-trust with citizens
- Maximized community wealth

IAM maximizes community wealth

Service Value of Asset	Financial Value of Assets
Physical infrastructure and equipment are the backbone of public service delivery	Assets have a financial value - they cost money to acquire and generate funds when sold
Service value assesses assets' contribution to effective public service delivery.	It reflects the asset's impact on the local government's finances and is used for accounting and investment analysis purposes.



**Wealth of the
Community:
Economic,
Social,
Financial,
Environmental**

Who Does Infrastructure Asset Management?

It is not the job of one department alone. Asset management requires input from multiple disciplines:

- Leadership and governance
- Finance
- Engineering and technical services
- Procurement and contract management
- Community engagement and communications
- Operations and maintenance teams

It works only as a team effort across the public sector. It is about organizational change and instilling a new culture

Infrastructure asset management belongs to the whole organization.



Section 3: Infrastructure Asset Management as a Public Sector Practice:

The three pillars of lifecycle management

DEMAND MANAGEMENT

- Current and future demand
- Regulations
- Level of service

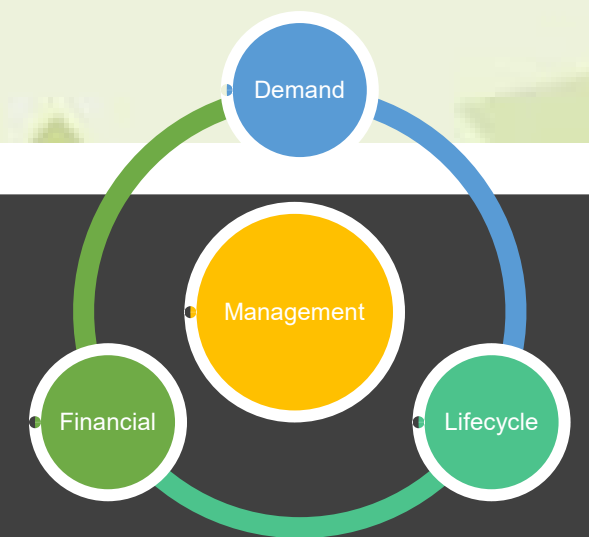
LIFE CYCLE MANAGEMENT

- Asset portfolio
- Life cycle analysis
- Risk management
- Capital improvement plan
- Decision support

FINANCIAL MANAGEMENT

- Financial analysis (affordability)
- Benefit-cost analysis
- Funding plan

Three Pillars of Asset Management



BREAK FOR DISCUSSION

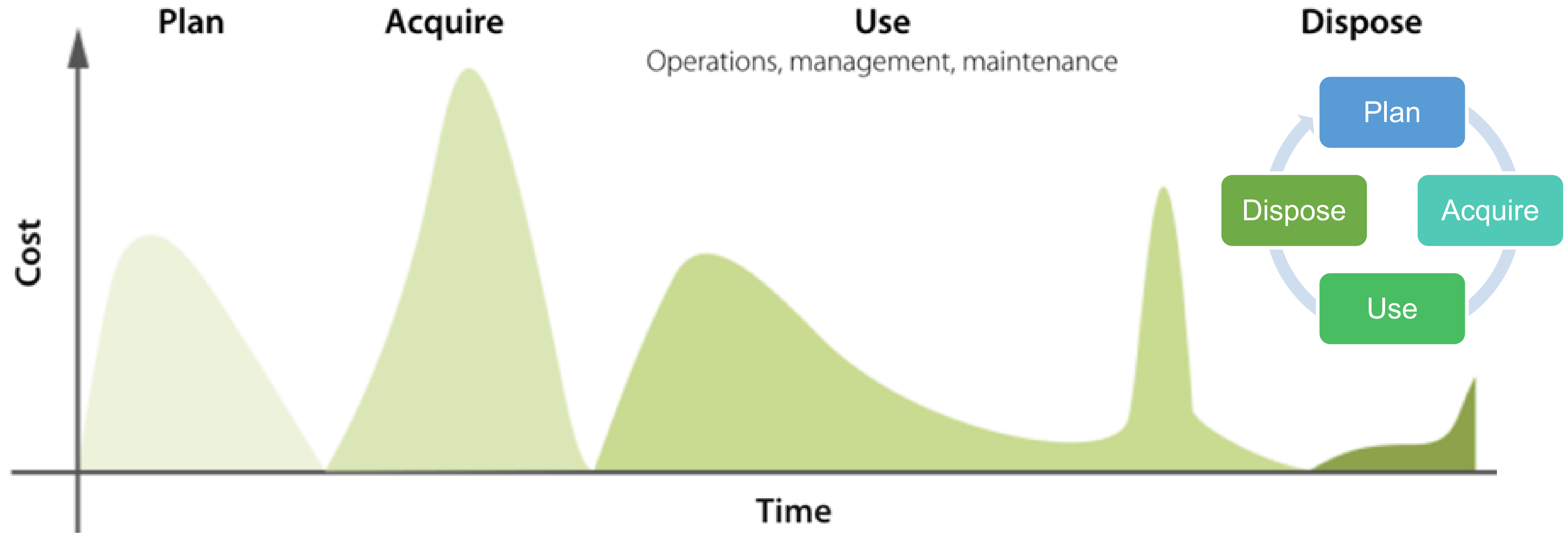
Dear Facilitator,

Please stop the recording and
prompt discussion:

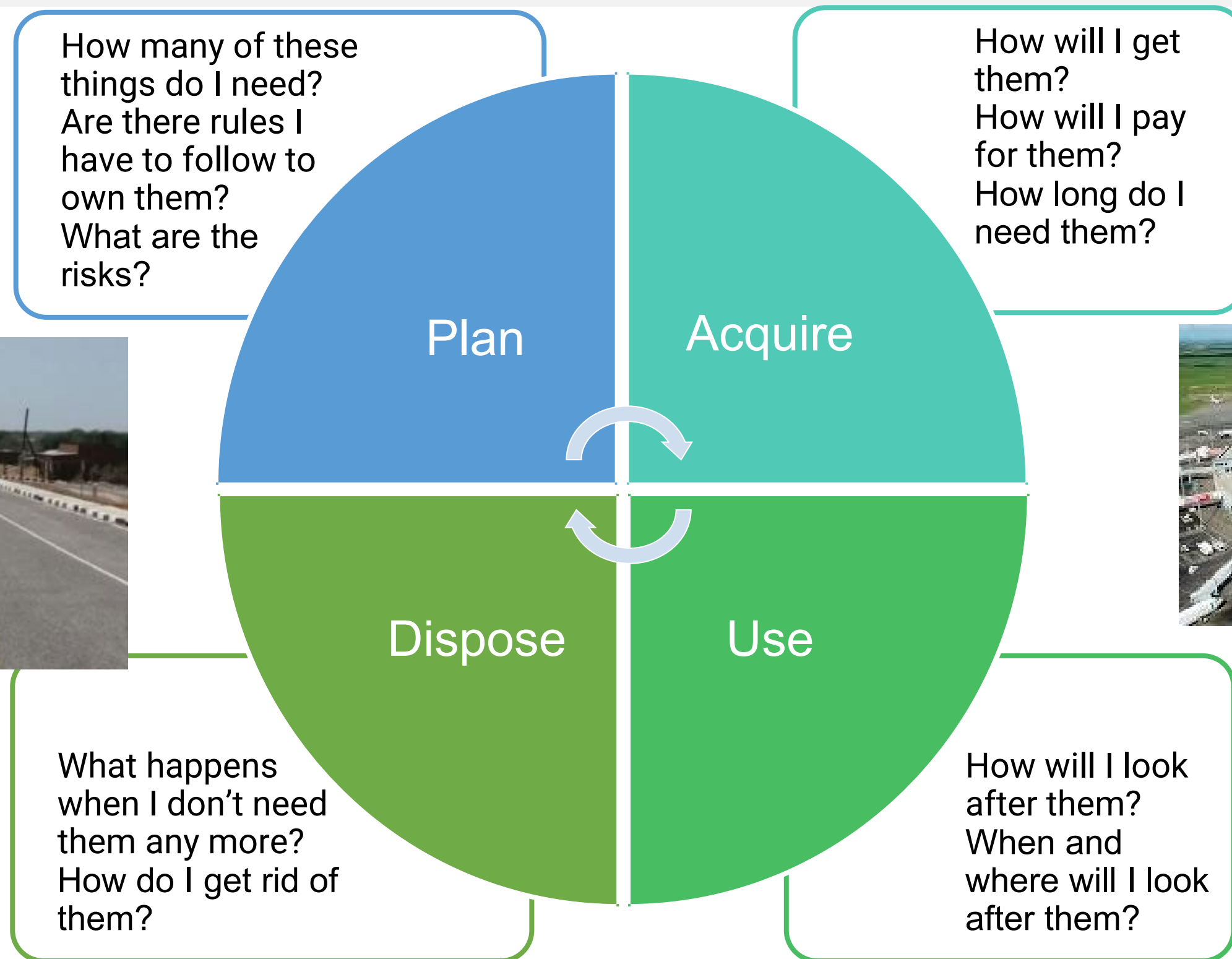
What are the different phases of an
asset life cycle, and how do they
differ in terms of their importance
and costliness?



Lifecycle -management of assets

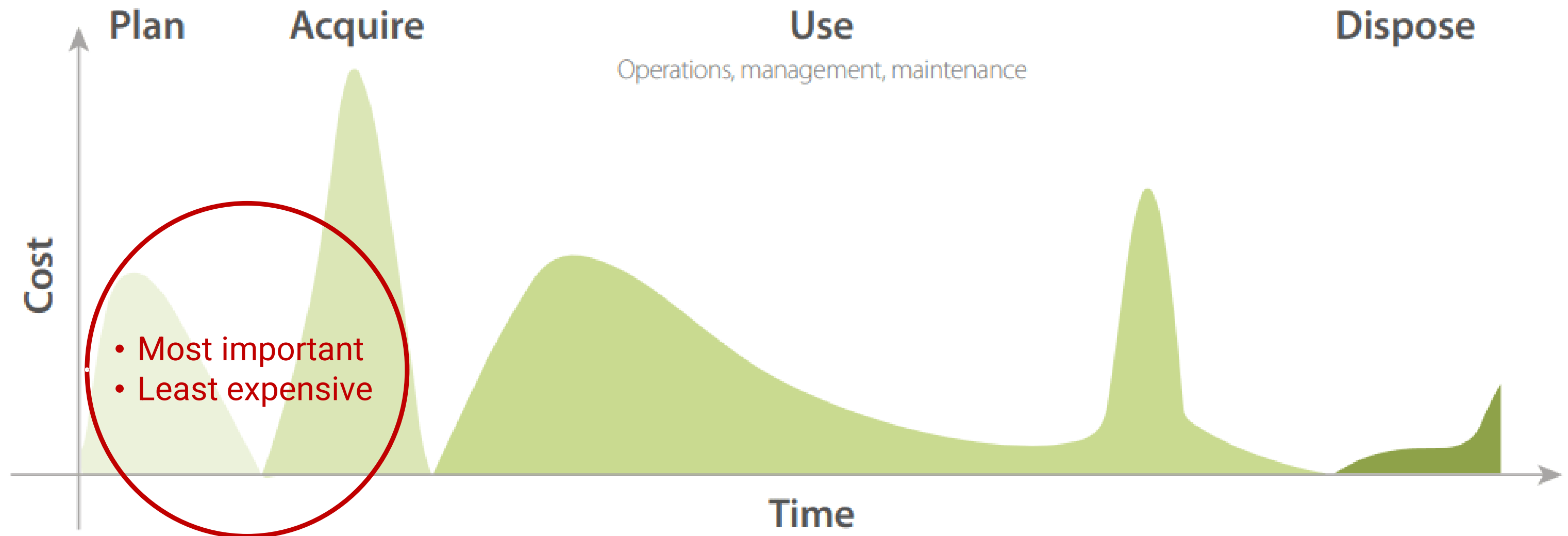


The Big Questions Revisited



Plan

The life cycle of a physical asset



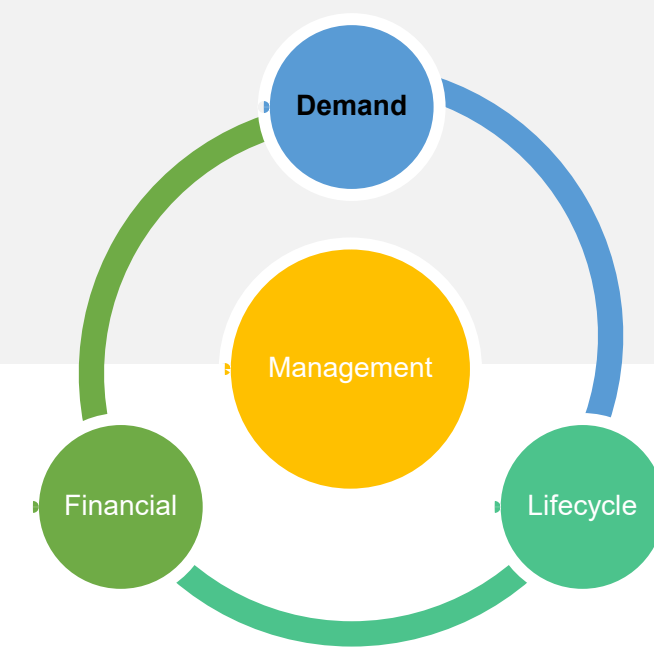
Planning Questions

- Purpose & Users:
 - **Why do we need it?** What service, **for how long**, and **who** uses it?
- Cost & Affordability:
 - Can we **afford** the life-cycle cost? What **funding sources & timing**?
- Delivery & Capacity:
 - How will we **acquire, operate, and maintain** it? Do we have the **people/skills**?
- Dependencies & End-of-lifecycle:
 - Are other assets affected by this asset?
 - How will we **dispose/renew** safely?



Planning: Regulations

- Legislation
- Policies
- Directives
- Standards
- Guidelines



Planning Example – A New Landfill

Strategic

- Location and size
- Regulations
- Closure and monitoring of the existing landfill
- Funding sources
- Consult the local community

Tactical

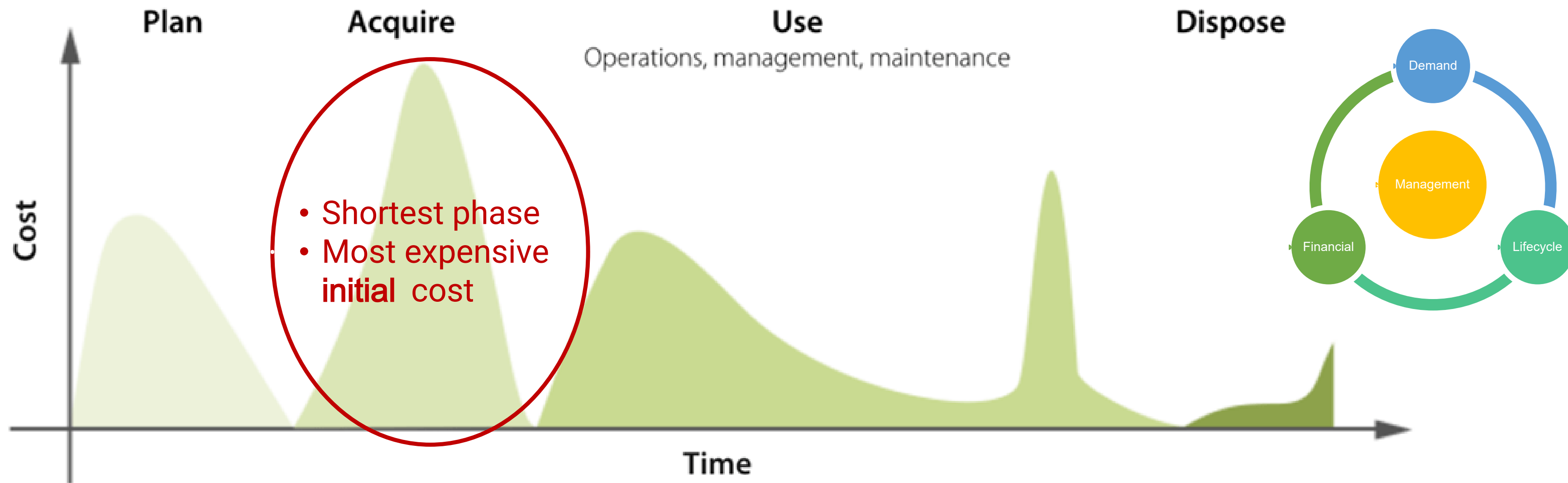
- Type of landfill
- Cost to manage over its entire lifecycle
- Type of collection services it provides and their associated costs
- Service options with the local community
- Discuss types of collection with community
- Discuss transfer systems with operations staff

Operational

- Design of the landfill
- Types of vehicles needed for collection
- Training requirements for operators
- Meet with operations staff to ensure equipment used at the new site is properly operated and maintained
- Inform community of collection system



Acquire



BREAK FOR DISCUSSION

Dear Facilitator,

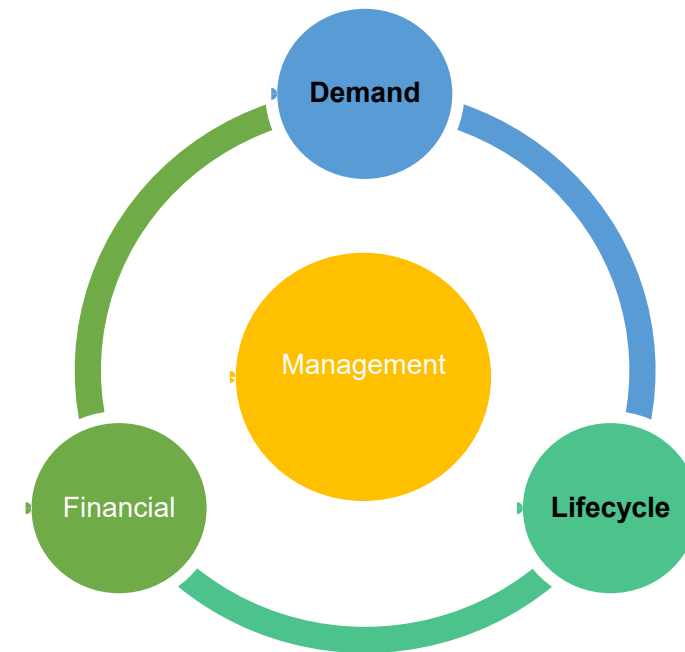
Please stop the recording and
prompt discussion:

What are the key questions we
need to ask ourselves as public
asset managers during the
construction and acquisition phase
of an asset?



Acquisition Considerations

- What are the relevant legislation, policies, directives and standards?
- What services need to be provided to whom?
- Should we build, purchase, lease, renovate/expand existing?
- What are the risks associated with construction phase?
- What are other non-financial costs associated with construction phase?
- Are other assets affected or linked



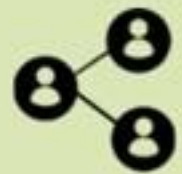
Acquisition – Financial Management

**Not only financial costs involved
but also:**



Economic costs

- Business loss
- Property damage



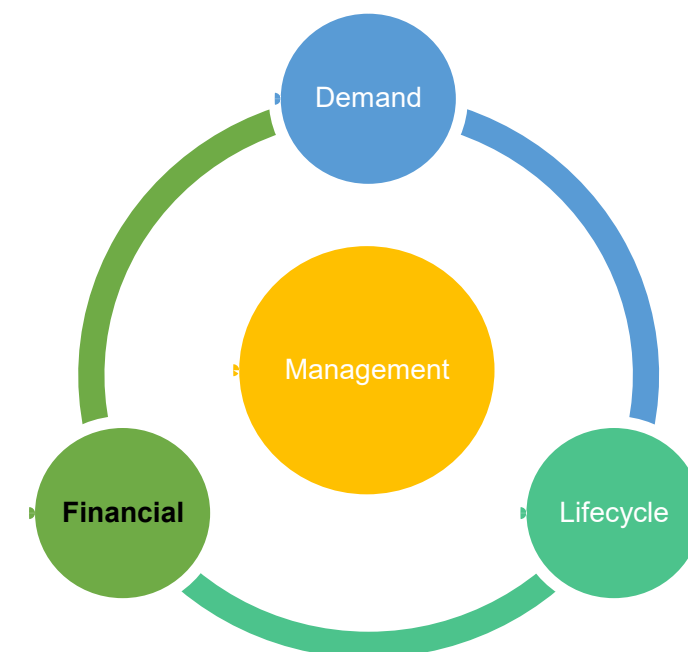
Social costs

- Business disruption
- Service disruption
- Traffic delays
- Gender-unequal impacts
- Reduced accessibility



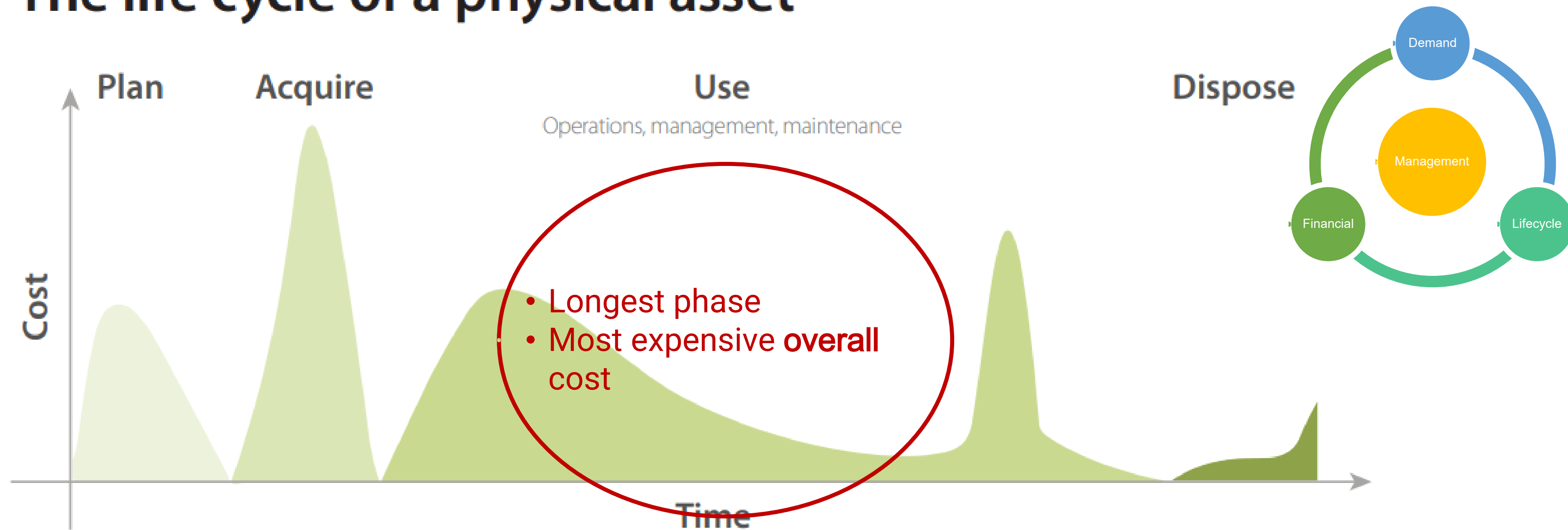
Environmental costs

- Contamination
- Pollution
- Public health impacts



Use

The life cycle of a physical asset



Our Asset Register provides key data for the use phase

basic asset information

advanced asset information

cadaster #
associated assets
GIS coordinates identification # type
age digital map address capacity current use
year acquired location occupancy condition
year built performance size failure risk
remaining service life total area construction material
inspection date region length user satisfaction
replacement records municipality estimated market value
repair records country construction cost
maintenance records annual operating costs
annual depreciation amount depreciated book value
annual maintenance costs
replacement cost

Use: Service Life

3 years



10 years



25 years



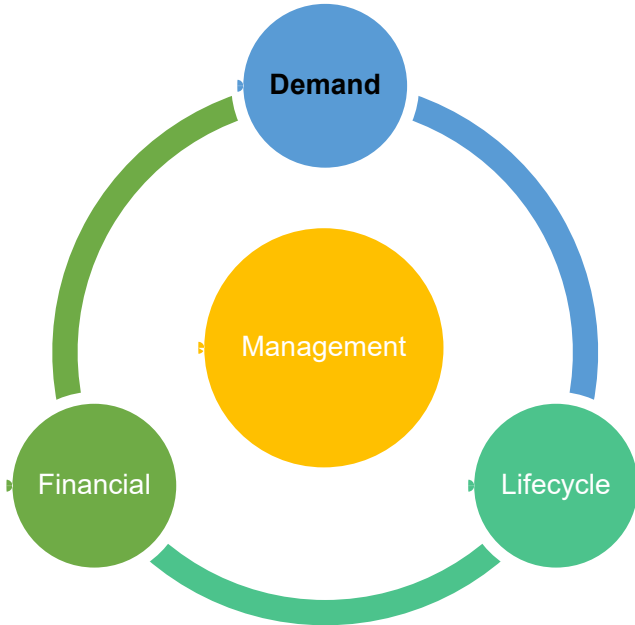
40+ years



50+ years

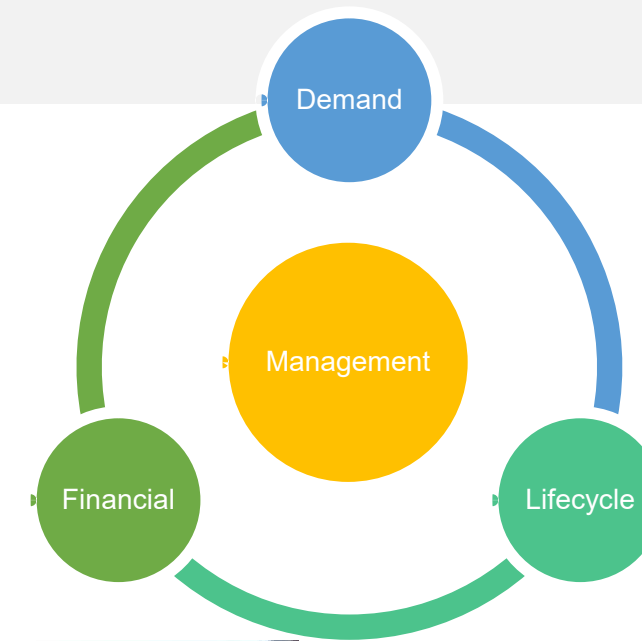


No set life



Use Considerations

- Demand and supply needs to constantly reassessed
- Levels of service need to be adjusted
- Operations and maintenance needs must be understood and financed
- Asset performance must be monitored and ensured through preventive maintenance



BREAK FOR DISCUSSION

Dear Facilitator,

please stop the recording and
prompt discussion:

How do we know an infrastructure
asset is performing well during its
use phase? Can you share a
concrete example from your own
experience?



Performance Measurement & Monitoring



Technical
attributes
and
performance
measures

Customer-
based attributes
and
performance
measures

Target: 25L/per
person/day

Actual: 20L/per
person/day

Reliability

- ≤ 10 breaks per 10km of pipe per year
- < 25 service disruptions per year per well

Availability

- Water yield $\geq 25\text{L}$ per person per day
- 1 borehole per 1,000 people

Compliance

All regulatory requirements

Responsiveness

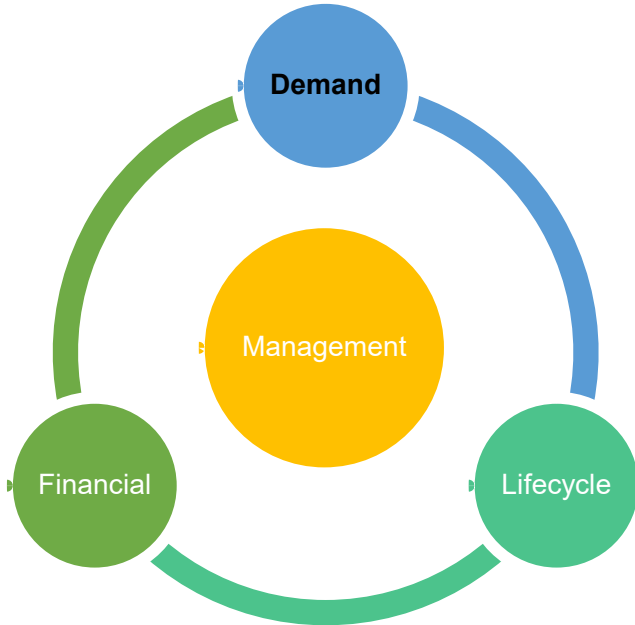
Respond to customer complaints within 24 hours

Accessibility

Boreholes accessible 16 hours per day, 7 days per week

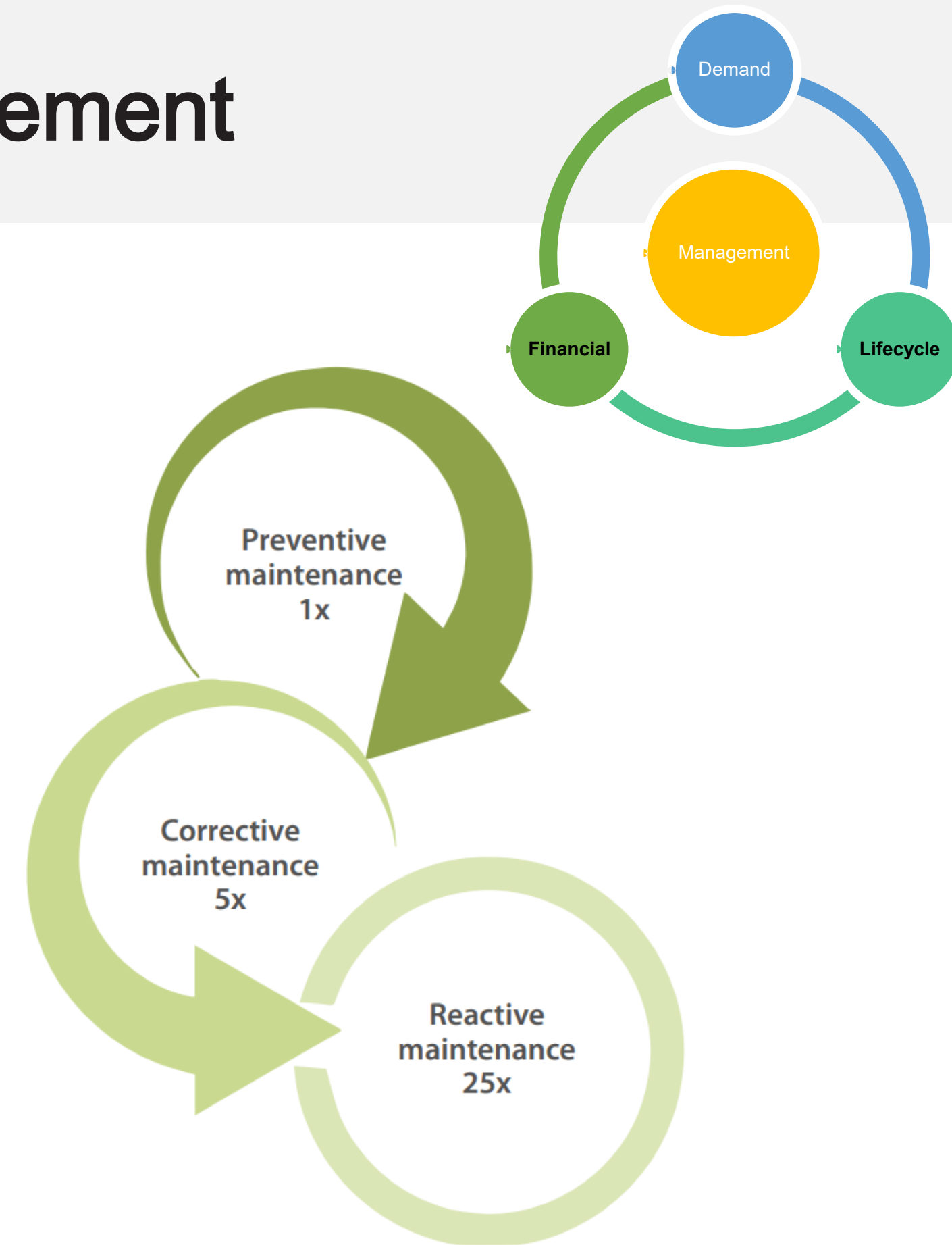
Safety

Women have safe access to



Use: Preventive Management

- Asset portfolio
 - Look at all of your assets
- Do we have a plan for:
 - Maintenance we will do and when
 - E.g. road grading
 - Rehabilitation of key asset components
 - E.g. road resurfacing
- What risks are associated with the operation of our assets?
- **CAN WE AFFORD THIS?**



Preventive Maintenance is also based on risk



THINK OF ASSET RELATED EVENTS WE
WANT TO AVOID ...

Example: Our borehole will run dry

Risk = Likelihood x Consequence

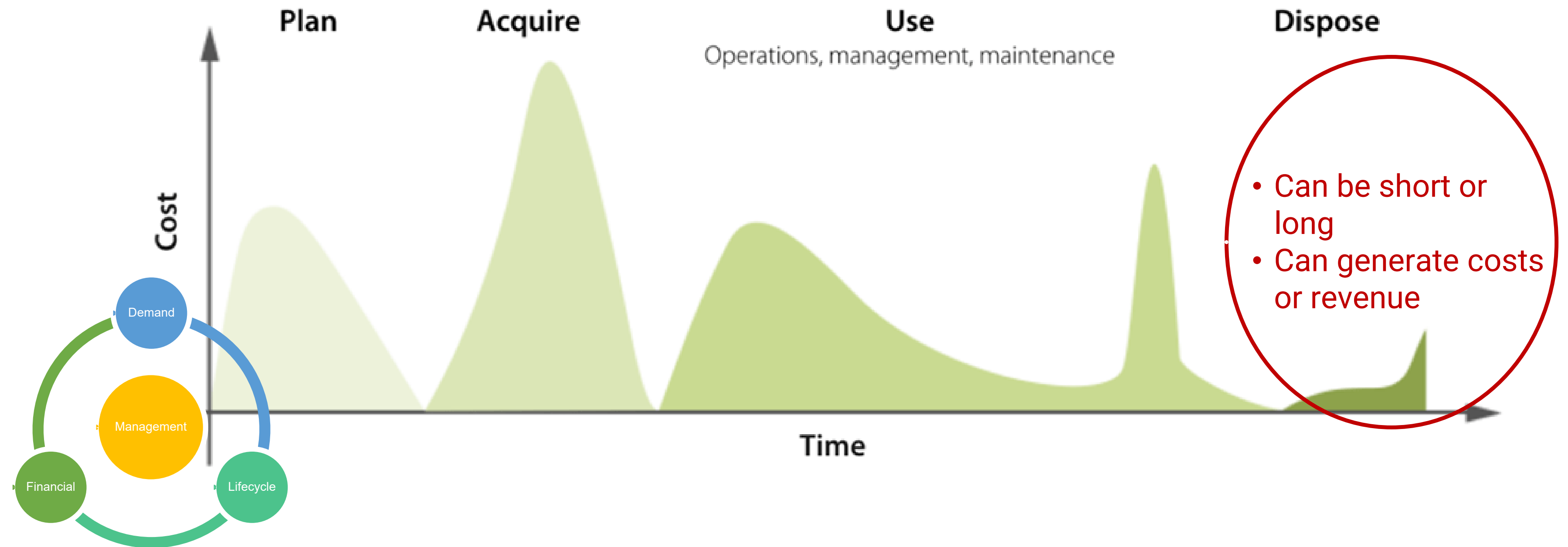


Probability or
chance that an
incident occurs

The result or effect
of an incident
occurring



Dispose



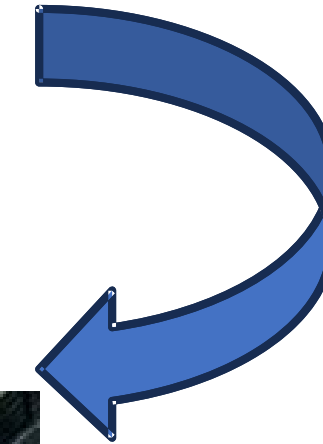
Disposal Considerations

- Is there still demand?
- Is it still performing?
- Sell or transfer?



Systems-based Management of Infrastructure Assets

- Continuous process to select, prioritize, and control infrastructure projects and assets
- Ensures investments align with strategy, capacity, and risk tolerance
- Strategic: Find best mix of assets for local government
- Tactical: Find best sequence of lifecycle interventions to maximize benefits and minimize costs



Optimizing Sequencing Decisions

Optimal sequencing of interventions across assets are crucial for managing risk, optimizing capital allocation, and maximizing long-term service value.

The order in which assets are bought, sold, or maintained can also have a significant financial impact.

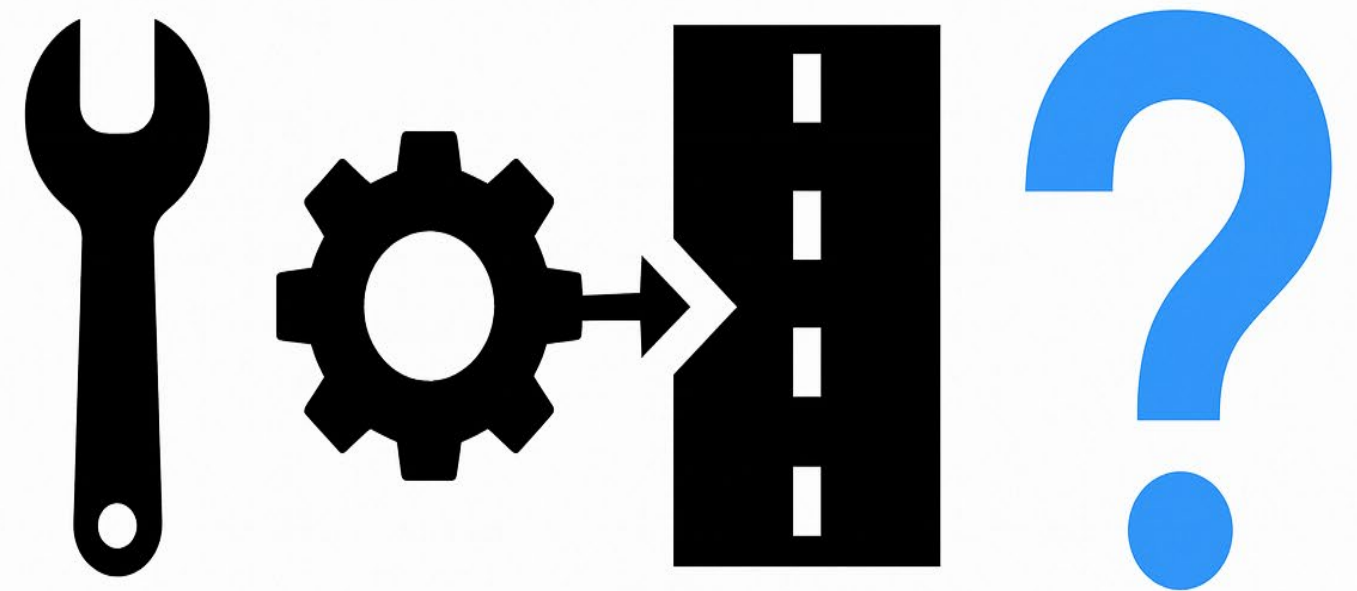


BREAK FOR DISCUSSION

Dear Facilitator,

please stop the recording and
prompt discussion:

What is one example of systems-
based asset management where
sequencing of maintenance
decisions had a decisive impact?



Keeping a bird's eye perspective: Systems-based Infrastructure Asset Management

**Challenge:
Road and Water
Pipe need
Maintenance:**

Systems-based
asset management



Conduct road & water pipe repair together – Dig once only!

Siloed asset
management



Road repair → (then) → Water pipe repair

Planning Systems - Based Asset Management⁶



Asset managers looking at planned/needed interventions, assessing those collectively.

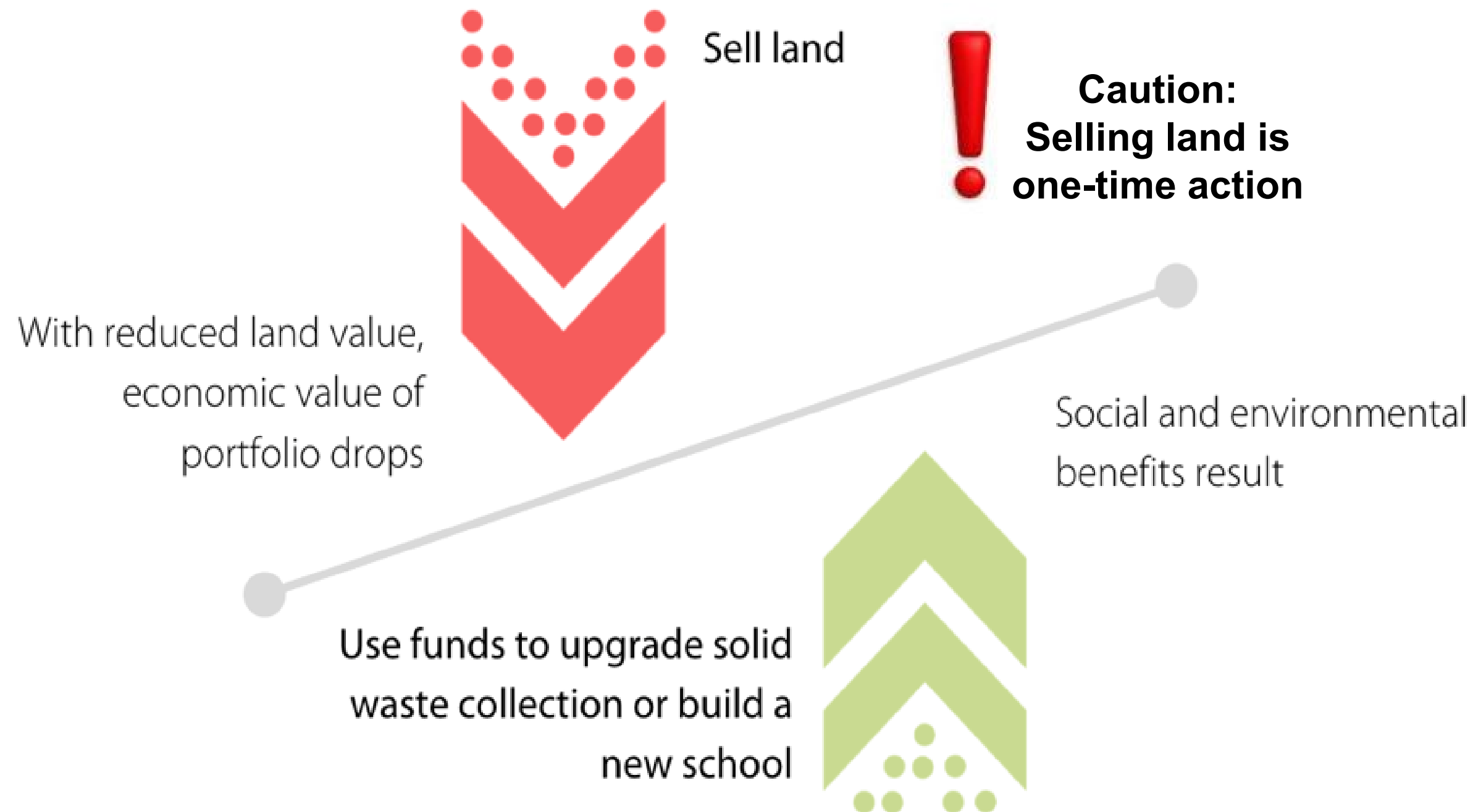


Workers conducting excavation and repair near multiple buried lines.



Interventions documented to inform future systems-based decisions

Strategic Considerations of systems -based Infrastructure asset management



RECAP



Asset Management is ...

- Having the right assets, at the right place at the right time
- Managed by the right people
- With the right tools

Remember the Fundamental IAM Questions



**What and
where is the
asset?**



**What is it
worth?**



**What is its
condition?**



**What is its
remaining
service life?**



**What is its
deferred
maintenance?**



**What
should you
fix first?**

Adapted from Vanier, 2000, p. 13 with images from the Noun Project.

Thank you!



Please stay in touch: platz@un.org



and download our free toolkits!
<https://financing.desa.un.org/IAM>

