

# Demystifying Sustainability: Principles & BMPs for Infrastructure Projects



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# Agenda



**Defining sustainability**

**Infrastructure as the vehicle**

**Project planning cycles**

**Questions we should be asking**

**Best management practices**

**Following through**

**Potential paths forward**

# Defining Sustainability



# What is Sustainability?

## The Core Concept

“Meeting our own needs without compromising the ability of future generations to meet their own needs.”

- Brundtland Commission, 1983

“Normative” – based on what we find valuable or desirable!



# What is Sustainability?

## The Three Pillars

### Ecological

Clean Water

Clean Air

Clean Land

Biodiversity

Open Recreational Space

Preservation of Non-Renewable Resources

### Human

Disproportionate Impacts

Input on Community

Loss of Cultural Spaces

Loss of Aesthetics

Recreation

Health

Use

### Economic

Creating Jobs

Losing Jobs

Moving Industry Forward

Securing Stability of an Area

Decreased Profit

Increased Profit

# Elements of Sustainable Development

## Principles to Keep in Mind

Education

Stabilization

Reduce  
Pollution

Efficient Use  
of  
Resources

Reducing  
Disparity in  
Lifecycles

Restoring  
Landscapes

# Infrastructure as the Vehicle for Change



# What is Infrastructure?

## Basics

Merriam-Webster Dictionary: “the system of public works & the resources required for the activity”

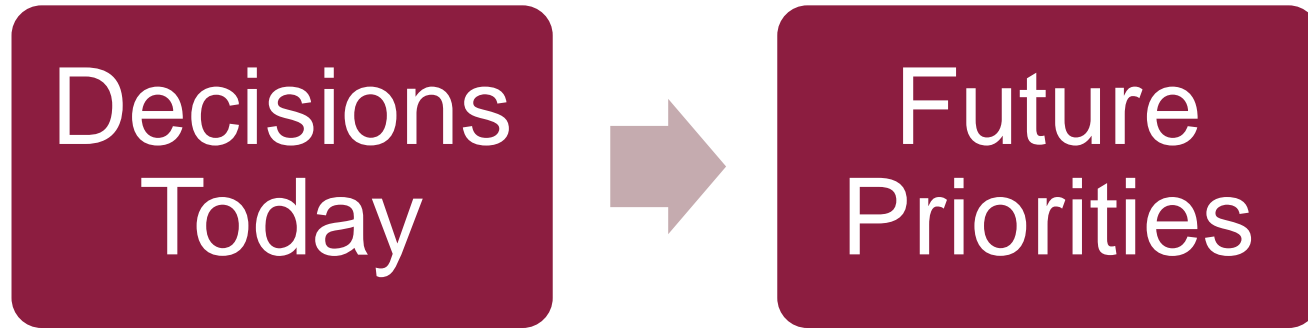




# Infrastructure is Vital to Sustainability

## Longevity

Infrastructure is designed for about 50 to 70 years of life.



The I-10 was built in 1957 and finished in 1960. Our valley is vastly different today than it was 60 years ago

# Infrastructure is Vital to Sustainability

## Presence

How many pieces of infrastructure did you interact with on your way to this conference today?

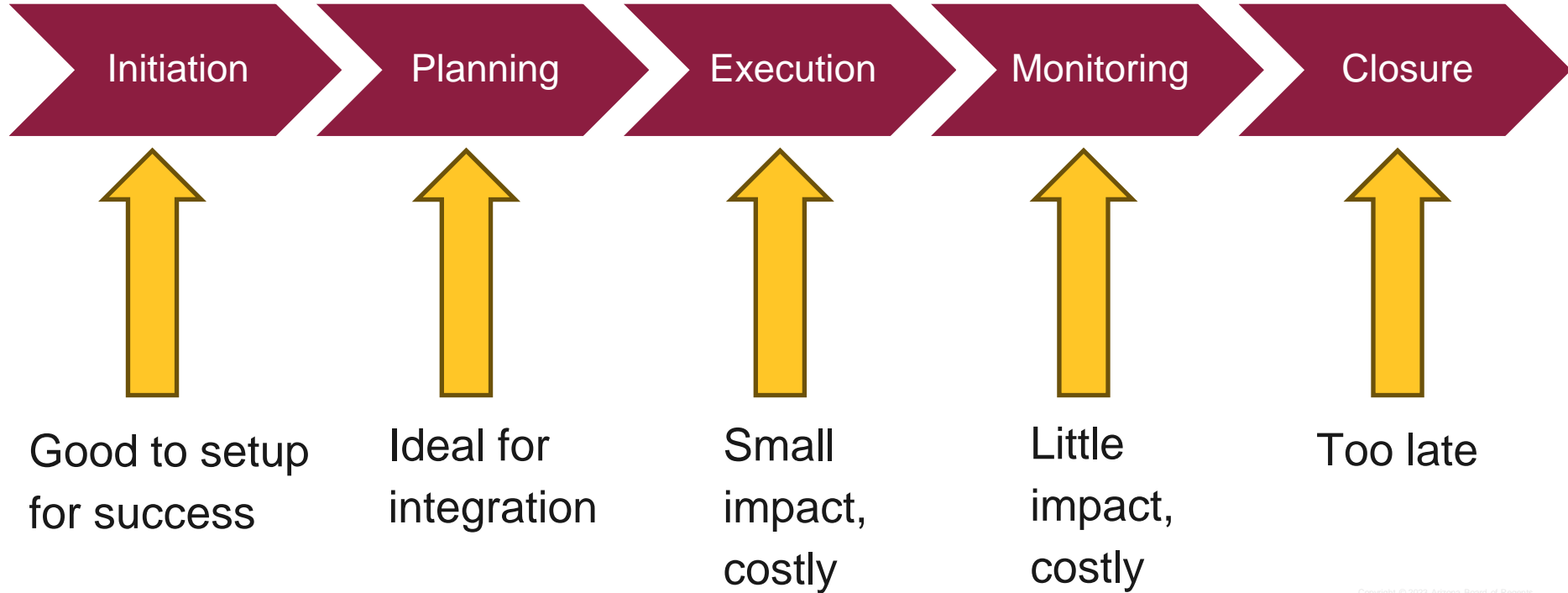


# Basic Project Planning Cycle



# The Project Stages

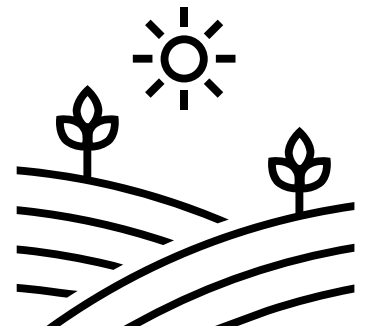
## Where to Begin Sustainability Integration



# Impact of Introducing Sustainability

## Characteristics of Sustainable Project Planning

- Increased program impact
- Continuity
- Improved evaluation and accountability
- Long term efficacy
- Improved scheduling & resource management
- Monetary profits
- Marketing profits



# Questions We Should Be Asking



# Who?

Who is benefiting from the project?

Who is harmed by the project?

Who will be using this 10, 20, 50, 100 years from now?

# What?

What is the purpose of this project?

What is the value brought by the project?

What could this project bring to or take away from the community?

What could this project bring to the economy? The environment?

What are the impacts to the environment going to be?

What mitigation efforts can we implement?

What is our budget? Does it account for sustainability efforts?



# When?

When will the project be initiated and finished?

When will construction take place?

Will it still serve purpose in the future?

Should we wait? Or expedite?

Will we see the environmental impacts during construction? Operation?

Today? 100 years from now?

# Where?

Where is the project going to be located?

Is that the best location? Or just the most convenient?

Where could we locate the project?

# Why?

Why this project?

Why this location?

Why now?

# Is This the Right Project?

## Make Intentional Decisions

Is this project right for the problem?

Or are we just following a pattern that isn't sustainable or serving us a valuable purpose?



# A Dash of Best Management Practices

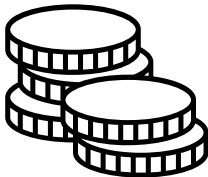


# Leadership

## Allocation of Funds & Time

Without leadership buy in – your sustainability project is dead in the water.

Leadership creates the workplace culture & the project priorities

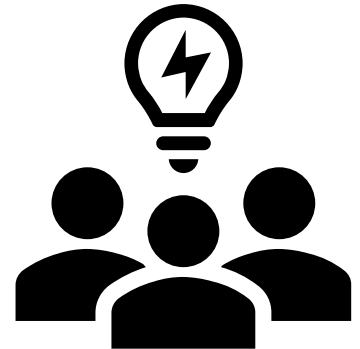


# Teams

## Someone Needs to Do the Work

Having people on the team dedicated to sustainability and willing to do the “extra” work will make the process go smoother.

Hiring people that are proactive and value sustainability principles will also lead to easier project integration. Consider including these metrics on your request for proposals!



# Stakeholder Outreach

**Quality of Life is Determined by Those Affected**

Should be early & often

Community engagement plans

This shouldn't be performative, but rather done to inform your decision-making processes





# Siting Plans

The Best Property Might Take Time to Find

Brownfields vs Open Space

Disproportionate pollution impacts

Minimize cultural, historical, and aesthetic impacts

Shift away from environmentally sensitive areas



# Minimize Waste & Pollution Production

## Design for Minimal Waste

Find ways to minimize pollution production at various stages in the project's lifetime

### Waste

- Less hazardous
- Long lasting materials

### Water

- Recycle potential
- Contamination reduction

### Air

- Reduce VOCs
- Reduce dust

### Construction

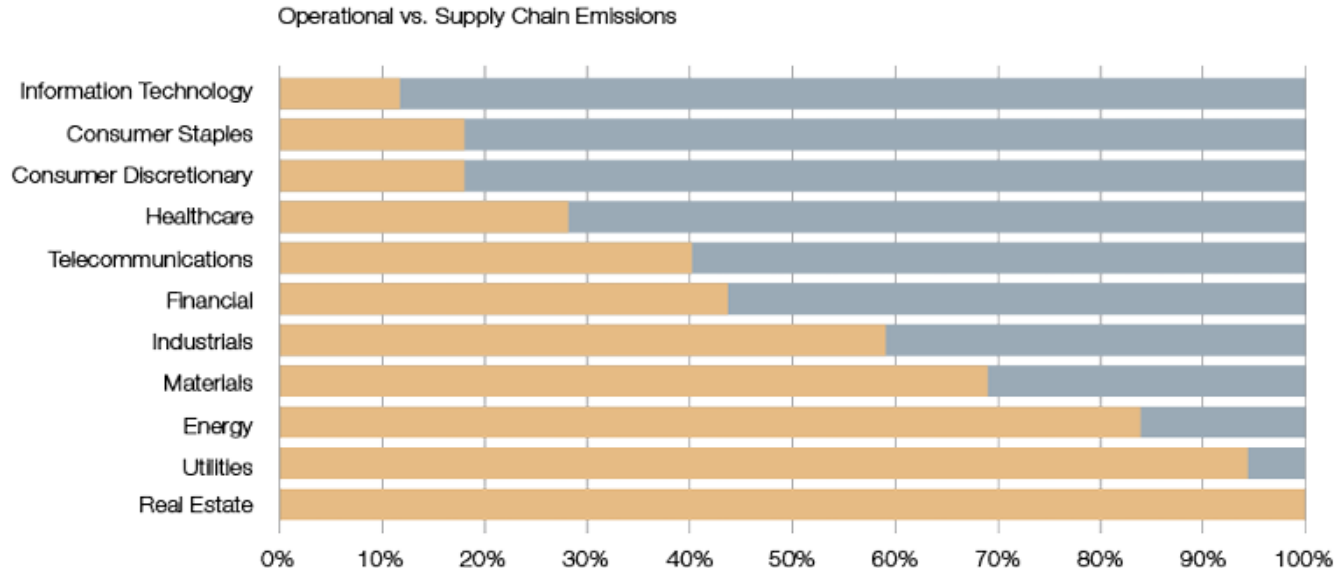
- Dust
- Noise
- Timing

# Find Conservation Opportunities

## Thinking Outside the Box – Lifecycle Impacts

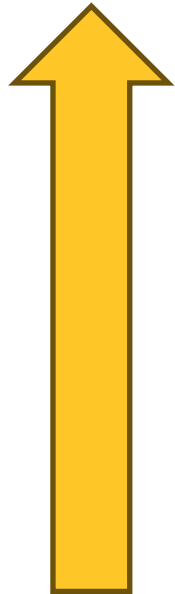
Recycled materials

Local vendors / minimal shipping



# Industry Best Management Practices

Sustainability Overlaps with Efficiency



Efficiency =



Sustainability =



Profits

# Think of the Entire Lifespan

## Infrastructure Impacts the Next Generation

The impacts we consider in the now may have higher stakes in 100 years when its time to demolish this infrastructure



# The Importance of Following Through



# The Curse of Imperfection

**We Can't Succeed if We Never Try**

“We don't need a handful of people doing zero waste perfectly, we need millions of people doing it imperfectly.” – Zero Waste Chef

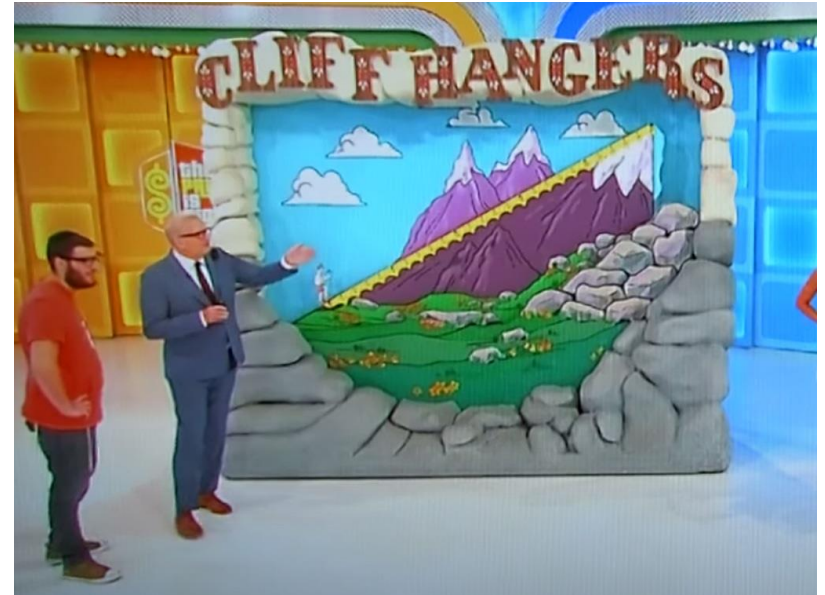


Working towards increased sustainability in our projects is better than never trying

# Tracking & Monitoring

Non quantified goals aren't achievable

Costs, impacts, mitigation efforts & minimization, metrics to strive for





# Celebrating

Unacknowledged successes aren't repeated



# Some Avenues to Explore



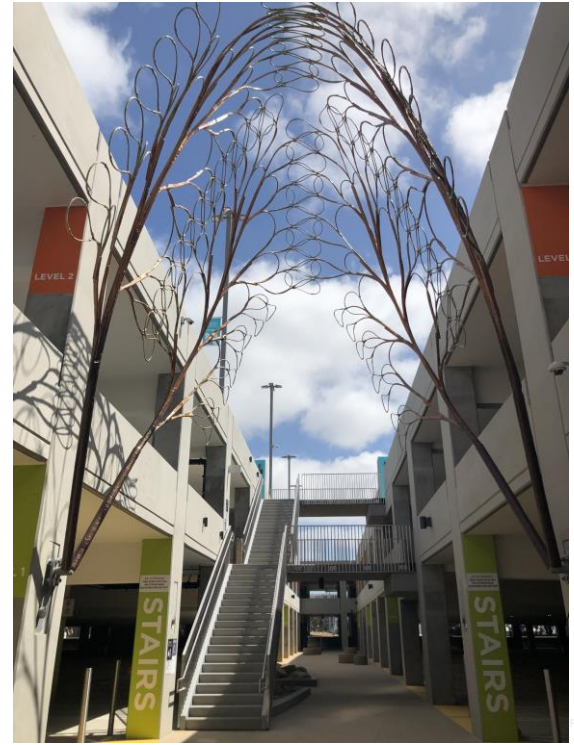
# LEED

For occupied buildings – framework and recognition program



# Envision

For infrastructure – framework, workshops, and recognition programs



# Local Programs

Local First

VESP

AZ Forward



# Questions?



# References Links

<https://sustainableinfrastructure.org/>

<https://www.usgbc.org/leed>

<https://www.azdeq.gov/VESP>

<https://www.epa.gov/p2>

<https://www.un.org/en/academic-impact/sustainability>

<https://www.pmi.org/learning/library/fundamentals-project-sustainability-9369>

<https://arizonaforward.org/>