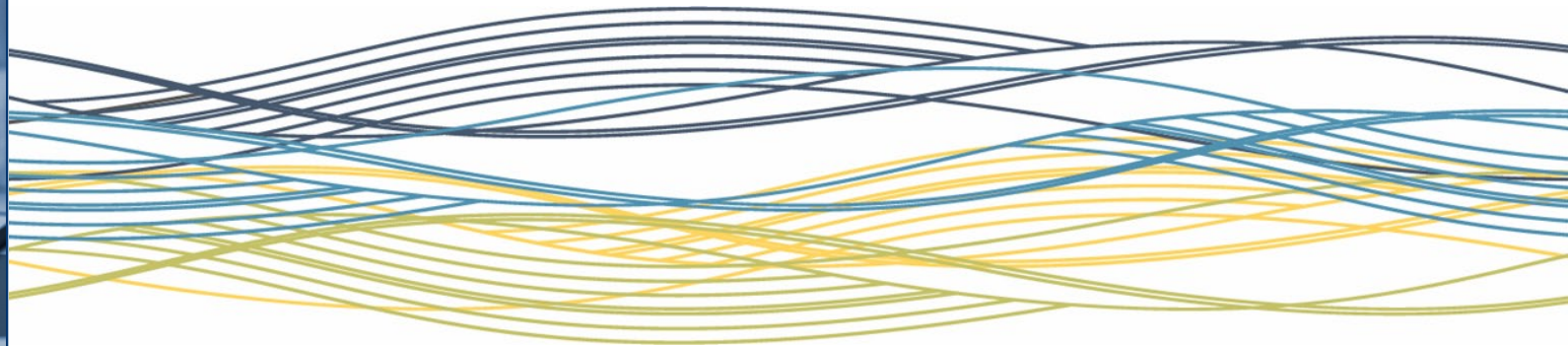


LECTURE 10

Achieving Sustainability through Business Practices

Contracting and Sustainability

Contracting is the process of establishing a **legally enforceable agreement** expressing the expectations, responsibilities, and protections of each party for services and materials.



Contracting and Sustainability



Contracts are a risk allocation instrument that identifies how the risk associated with sustainability goals and requirements is shared between the contract parties

Specifically, contracts can:

- Allow, mandate, and incentivize sustainability
- Explain how sustainability is priced
- Describe how the risks associated with sustainability are allocated

Source: S. Muench, G. Migliaccio, J. Kaminsky, M. Ashtiani, A. Mukherjee, C. Bhat, and J. Anderson. *NCHRP Research Report 916: Sustainable Highway Construction Guidebook*. 2019. <https://doi.org/10.17226/25698>

Allowing Sustainability

The passive contractual approach to sustainability is to allow certain sustainable construction practices (SCPs) but to require none

- It is the least effective method to address sustainability because there is **no guarantee** that any SCP will occur
- Typically, a contractor will only implement an allowed but not required SCP if it represents a **business opportunity**
 - If the SCP can increase revenue or market share, reduce expenses, increase employee productivity, or reduce risk
 - Contractor wishes to implement an SCP for reasons of goodwill (done for the greater good of society)

Source: S. Muench, G. Migliaccio, J. Kaminsky, M. Ashtiani, A. Mukherjee, C. Bhat, and J. Anderson. *NCHRP Research Report 916: Sustainable Highway Construction Guidebook*. 2019. <https://doi.org/10.17226/25698>

Requiring Sustainability

The aggressive contractual approach to sustainability is to require specific SCPs within the contract

- One way to **require SCPs in a contract** is to specifically call out each one in the contract and/or specifications as any other construction practice would be
- Alternatively, a **performance-based metric can be** identified in the contract, allowing the contractor to meet it by choosing from a list of SCPs
 - This provides contractors with the flexibility to meet sustainability requirement in the most cost-effective and efficient manner
 - For example, including a requirement in the contract to use a particular accelerated bridge construction technique deemed most feasible for a particular project

Source: S. Muench, G. Migliaccio, J. Kaminsky, M. Ashtiani, A. Mukherjee, C. Bhat, and J. Anderson. *NCHRP Research Report 916: Sustainable Highway Construction Guidebook*. 2019. <https://doi.org/10.17226/25698>

Incentivizing Sustainability

The positive contractual approach to sustainability is to incentivize inclusion of SCPs in a project

To incentivize inclusion

- Contractors must spend money to achieve an incentive, so incentives should not be viewed as entirely supplemental income/profit
- There are associated expenses, which can be substantial
- Incentivizing SCPs adds to the *allowing sustainability* approach by providing money to influence when the contractor might view accomplishing an SCP as a good business opportunity
- There is no guarantee that any identified SCP will be accomplished since it is at the contractor's discretion
- An example of incentivizing SCPs is a payment offered by an owner to a contractor if the contractor's project team has one or more personnel credentialed in the sustainability rating system being used on the project

Source: S. Muench, G. Migliaccio, J. Kaminsky, M. Ashtiani, A. Mukherjee, C. Bhat, and J. Anderson. *NCHRP Research Report 916: Sustainable Highway Construction Guidebook*. 2019. <https://doi.org/10.17226/25698>

Pricing Sustainability

- **SCPs can be priced separately on a unit bid schedule**
- When done, it is often because the owner wants to identify how much **SCPs cost upfront** (*since sustainable practices, such as using materials with a lower carbon footprint based on an LCA, may be more expensive*)

Source: S. Muench, G. Migliaccio, J. Kaminsky, M. Ashtiani, A. Mukherjee, C. Bhat, and J. Anderson.
NCHRP Research Report 916: Sustainable Highway Construction Guidebook. 2019. <https://doi.org/10.17226/25698>

Pricing Sustainability (continued)

- If understanding the cost of sustainable practices is a goal, it can best be done by listing them separately as an ***alternate bid*** — a defined portion of the work that is priced separately, which provides the owner an option to include that scope of work
 - A baseline bid can be compared with a sustainable alternate bid
- Cost of sustainability is **difficult to determine** from a bid because:
 - Bids indicate price, not cost
 - Many SCPs have short or nonexistent histories, which may make an accurate estimate difficult

Source: S. Muench, G. Migliaccio, J. Kaminsky, M. Ashtiani, A. Mukherjee, C. Bhat, and J. Anderson. *NCHRP Research Report 916: Sustainable Highway Construction Guidebook*. 2019. <https://doi.org/10.17226/25698>

Sustainability Risks

Contracts determine risk allocation between parties

- **Risks involved with SCPs may be less understood and quantifiable than more traditional risks:**
 - Which party assumes the risk if it does not function properly?
 - What if it costs more than anticipated?
 - What if it gets removed from the contract by change order but is needed to meet a rating certification required by the contract?
- **Project delivery methods** that make communication among parties easier, such as design-build (DB), are generally better suited to sustainable procurement and contracting
 - Focusing on sustainability is relatively new, and more communication is needed to agree on processes and details that are newly developed
 - Project delivery systems that emphasize sharing of project risks in a non-adversarial manner, such as systems based on DB, show an improved performance on project sustainability metrics

Source: S. Muench, G. Migliaccio, J. Kaminsky, M. Ashtiani, A. Mukherjee, C. Bhat, and J. Anderson. *NCHRP Research Report 916: Sustainable Highway Construction Guidebook*. 2019. <https://doi.org/10.17226/25698>

Business Benefits of Sustainability

- 1. Drives internal innovation**
Sustainable practices provide the opportunity for new, innovative ideas to grow
- 2. Improves environmental and supply risk**
Renewable resources provide greater security over energy sources
- 3. Attracts and retains employees**
Commitment to sustainability may impact employees' career decisions
- 4. Expands audience reach and builds brand loyalty**
Focus on sustainability may help build a broader, more loyal customer base
- 5. Reduces production costs**
Using fewer resources, or more sustainable ones, can decrease production costs

Business Benefits of Sustainability (continued)

6. **Garners positive publicity**

Sustainability draws attention in the form of press releases and announcements

7. **Helps you stand out in a competitive market**

Differentiation from competitors has market value

8. **Sets the industry trend**

Organizations that are the first in their field to adopt sustainable practices become a trend-setting leader and prompt other organizations to follow

<https://online.hbs.edu/blog/post/business-case-for-sustainability>

LECTURE 10

Achieving Sustainability through Business Practices