

To: Leavenworth, Washington, Council Member Samir Shahan and Chief of Staff Andrew Lee
From: Whitney Meyerhoeffer
Date: February 26, 2017
Re: Cost-benefit analysis applications to public works projects.

Executive Summary

This memo will explain the prudence of including risk and uncertainty in a cost-benefit analysis of a public works project. Cost-benefit analysis is a way to analyze whether a project should move forward based on the overall costs or benefits of the project. When dealing with a system such as public works, uncertainty and risk are just as vital to include in a cost-benefit analysis as tangible capital. Water supply is an integral part of a community and, as such, any potential changes should be met with caution. The prosperity of citizens depends on safe, clean water.

Background

Cost-benefit analysis shows public service officials the net costs or benefits of a proposed project. This analysis includes both the tangible and intangible costs and benefits. The result of the analysis helps administrators decide what will be the best option for the community. Before city council members decide on a course of action for our town's aging pipe system they need to look at how public works projects use the cost-benefit analysis model to help make decisions.

Analysis

Doing a cost-benefit analysis requires an assessment of all the benefits and all the costs of a course of action to see whether one outweighs the other. Formal cost-benefit analysis requires that you monetize the costs and benefits. In a public works project, and for our purposes in Leavenworth, you would want to ensure that risk and uncertainty have either been monetized or, at minimum, addressed.

In any project there is a level of uncertainty because no cost-benefit analysis can include the things we do not know about. Public works projects are ripe with uncertainty because much of the infrastructure is underground and thus the integrity of the infrastructure is unknown. For example, in our town of Leavenworth, we believe that the pipes are aging based on the timing of the last, however, it is not possible to know exactly what condition each section of pipe is in. Public officials may believe that they have all the information about the pipes but there is still a level of uncertainty because we don't know what we do not know about the pipes. Likewise, we cannot determine when the pipes will fail to work and exactly where. There could be a break tomorrow or in ten years and one area may seem to be weak while another is strong but more is happening underground than we can see.

Risk is also a vital to the cost-benefit analysis of a public works project. Specifically, the perception of risk should be addressed with public works. The perception of risk is the subjective view of how people value the risk of taking or not taking an action. Since water is the lifeblood of a community, it is likely that the public would have strong views against taking risks with the water supply. Public officials should consider the perception of risk from the viewpoint of a resident when hedging on our creaky pipes not breaking down in a way that may adversely affect the community. This viewpoint should be noted in a cost-benefit analysis.

Sunstein (2005), in his article, “Cost-Benefit Analysis and the Environment,” argues public officials use the precautionary principle when projects affect the environment. The precautionary principle “recognizes the limitations of existing knowledge and protects against harm that cannot yet be established.” Public officials should err on the side of caution when implementing new projects because they are protecting communities from things they might not be aware of yet. For a public works system you have to ask whether or not it is better to address the problem now, knowing that there are uncertainties and knowing the risk perception of the public, or is it better to wait and see if there will actually be a problem in the future. Since water is so important to the community, it is necessary to take action in order to avoid possible catastrophes later.

Options

In contrast, another option would be to do nothing and wait to see if a problem results at a later date. Some may say that since there is not sufficient evidence of a serious problem acting now could draw funds away from other more urgent programs. You can handle this by pointing to the levels of uncertainty and the subjective perception of risk from a residents point of view. Explaining what the worst case scenario may look like if a catastrophe hit and how that could impact the entire community is also another way to demonstrate the perceived risk. It would also be beneficial to note the level of uncertainty in the situation. Although there may not be a catastrophe at this time, we do not know what factors could come together to create one in the near future.

Recommendations

I recommend utilizing a cost-benefit analysis that also notes levels of uncertainty and risk perception in order to analyze any projects in the public works department. For a good such as water that is so essential to keeping a community running smoothly, it is advisable to utilize the precautionary principle when looking at new projects to undertake.

Conclusion

In the near future it may be a good idea to invest in research of the condition of the pipes. This way you are executing the precautionary principle as well as helping to reduce the amount of uncertainty. Although the resident’s perception of risk from doing such research may be high, it will be small and easily mitigated in comparison to their perception of risk in a catastrophe of the water system.

Bibliography

Sunstein, C. R. (2005, January). Cost-Benefit Analysis and the Environment. *Ethics*, 115(2), 351-385.
Weimer, D. L. (2011). *Policy Analysis: Concepts and Practice 5th Edition*. Boston: Longman.

Memo #1: 85

Assignment – Does the memo respond to the assignment? 25/25

Yes.

Analysis – Does the memo present a cohesive logic or narrative? Are its claims credible? 20/25

Seem embedded commentary. Look at this from the perspective of the client. She would presumably agree with everything written here – but she wouldn't really care!

Grounding – Does the memo use course materials to situate theories and concepts? 20/25

Look back at private and public goods. Why is public water public?

Readability – Is the memo efficient and well-organized? Is the language clear? Is it generally free of typos, grammatical errors, and other distractions? 20/25

This is basically an okay memo. Readers will understand what it says because it is clearly written and organized. It is free of typos and formatted for easy consumption. However, as the embedded comments indicate, this memo has a lot more to accomplish. As I see it, the first step is cutting out the excess verbiage and sharpening the points.